

MICHIGAN FARMER

AND STATE JOURNAL OF AGRICULTURE.

The Only Agricultural and Live Stock Journal in the State.

VOL. XXXII.
NO. 14.

DETROIT, SATURDAY, OCT. 2, 1897.

PRICE, 5 CENTS.
\$1 per Year.

Farm Department.

Conducted by J. H. Brown, who lives on his farm at Climax, Mich., which is conducted as the Michigan Farmer Experiment Farm. All correspondence for this department should be sent to Climax.

THE EDITOR'S FARM NOTES.

WHEAT SEEDING.

The writer personally attended to this work and drilled in a large portion of the wheat himself. We never had our seed bed in finer shape, except that the surface is too dry.

By the alternate use of both harrow and roller the seed bed was compacted thoroughly, all lumps pulverized, and a fine, smooth, mellow surface made for the reception of the seed.

As it was so very dry (no rain for nearly four weeks) we rolled down ahead of the drill. We like this plan of rolling before drilling, if there is not plenty of moisture in the upper two inches of surface soil, as it allows the drill hoes to deposit the seed at a uniform depth all over the field.

With a seed bed properly prepared we can drill in our seed at a uniform depth of one to one and one-half inches. At this depth there seems to be sufficient moisture to germinate the seed, although the average wheat ground shows very little moisture at a depth of several inches. Several farmers in the neighborhood say "it will do no good to sow until it rains, as it is dry as dust clear to the bottom of the furrow."

But no matter how dry it may be, it pays to plow as early as possible, drag or harrow down as fast as plowed and use the harrow and roller alternately on our soil, unless very wet.

There are fields, plenty of them, full of large hard lumps, that have been harrowed but twice, and now being drilled in to wheat. On very rich soil a fair crop may be assured, but, with proper treatment of the seed bed a far greater increase in yield could as well be secured. Such careless preparation of the seed bed does not pay, no matter what the soil may be.

A well compacted seed bed, properly fitted, if plowed early, will be moist underneath when seeding time comes, no matter how dry it may be. This has been our experience, on our soil.

We have "stubbled in" 19 acres of wheat ground on which the clover seeding failed last spring. The field has been "run" in years gone by, and we are anxious to get it well seeded down.

The field is 80 rods long, running east and west, and a portion quite rolling. Over a portion of the field we lightly and evenly top dressed with barnyard manure. No better material for furnishing fertility, unless it be a good crop of clover, has been found on this farm than good barnyard manure.

If possible to do so, we would put all our manure on the surface, and

never plow under immediately, as we usually do in the spring for corn. The place to put manure is on grass land,

saw any benefit, even in seasons following.

On the same wheat field mentioned

monia and eight to eleven per cent of available phosphoric acid.

The next acre, also sown to Dawson's Golden Chaff, was given 200 pounds of fertilizer per acre. The third acre has 300 pounds. The remainder of the field has no fertilizer except the top dressing of manure.

This top dressing runs across at right angles to the strips upon which the commercial fertilizer was sown.

Next season we shall cut and thresh the strips separately. If any difference can be seen in the growth of wheat we shall be pleased to report. But the actual threshing of each measured strip will settle the matter without doubt.

We hope to find that a superphosphate or an ammoniated superphosphate will pay to sow on our run down land when carefully fitted, sowed to wheat, and seeded down to timothy and clover.

We have done our best to make the experiment a success. Our new drill is perfectly adapted to work of this kind with its very complete fertilizer attachment.

At the same time we also sowed two quarts of timothy per acre. The timothy was sown just ahead of the drill teeth, and will be covered so as not to start as quickly as the wheat, and thus choke it out.

Never before have we drilled in wheat so easily and perfectly. The machine worked finely, and the "feed" of all three attachments was exactly according to the several amounts we set the gearing for sowing.

At every round we put in wheat, fertilizer, and timothy seed. The fertilizer ran down the same hoes with the wheat, and, we believe, if the fertilizer is "good for anything," it will assist the wheat in getting a fair start this fall before winter sets in.

If our wheat could only secure the old-fashioned fall growth we used to see, it would stand the winter better and we might secure a proportionately larger yield. This is just what the fertilizer ought to do, under the conditions in which it was sown.

We have so frequently seen commercial fertilizers tried in this county (Kalamazoo), and found wanting, that we have lost nearly all faith in them. We, however, hope to be agreeably surprised next threshing time.

In our last experiment with fertilizers in corn and potatoes we sowed them broadcast, having no drill with fertilizer attachment. So we now appreciate the attachment on the new drill. It is no more work to take out the fertilizer, fill the feed box and sow, than to sow wheat or oats. Another benefit we found was that the machine sows exactly what it is "set" to sow. Having used an old drill for years, that "bunched the seed," sowed all around the amount or quantity desired, and was bound to get out of "kelter," we now appreciate a perfect drill.

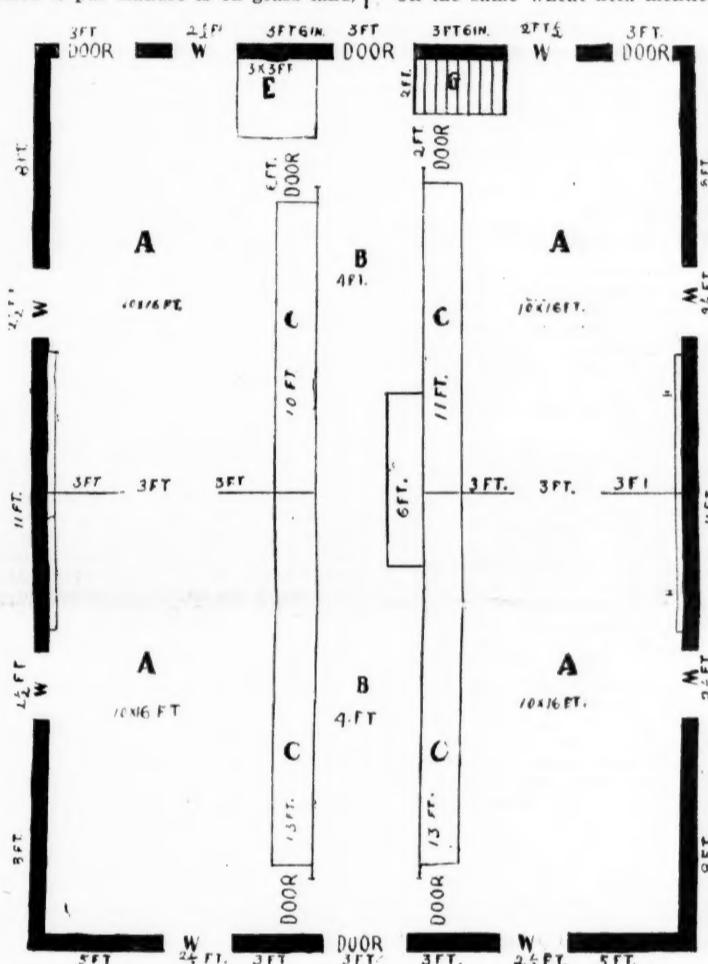


FIG. 1—Ground Plan for Sheep House—Scale 1/4 in. to 1 ft.—(For description see page 233.)
and it should usually be applied as fast as made.

COMMERCIAL FERTILIZERS.

We have never been satisfied with

above we have tried an experiment with superphosphate. Running lengthwise of the field, and on one side, we sowed one acre to Dawson's Golden

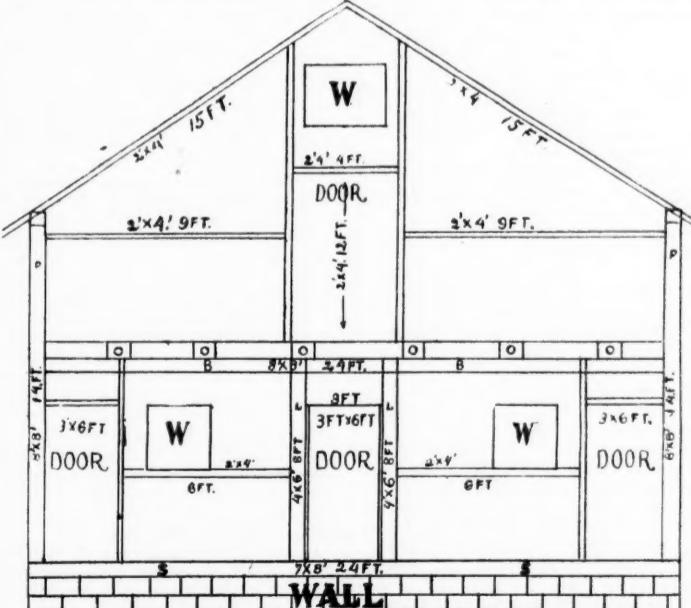


FIG. 2—End Bent of Frame.—(See page 233.)
previous tests of commercial fertilizers on our farm. Have tried them on chaff and also 125 pounds of a supersers on our farm. Have tried them on phosphates, having, according to analysis, from three to four per cent of am-

For the Michigan Farmer.
CORN HUSKING BY MACHINES.

In response to the editor's request for facts regarding corn husking with machines, I would say that this method is a success, when properly operated under reasonable conditions.

I believe the corn husker has come to stay, and is destined to become more popular with the farmers in general as they become more experienced in operating the same, and as they get better acquainted with the merits of its work.

I have employed a machine to husk our corn for the past two seasons, and shall continue to do so in the future. The corn was somewhat wet when it was husked both seasons. The result was some fodder became slightly damaged to a small extent, but none so badly but that the stock would consume it all with apparent relish.

I agree with Mr. Reynolds in that the shredded fodder should be spread around on scaffolds or bays (scaffolds preferable), as much as possible without packing it. If the fodder is perfectly dry when shredded, I believe it may be stowed away in any place and packed without danger of spoiling.

One of my neighbors had his fodder shredded when quite dry and packed down into a large mow. The last as well as the first came out the next spring as bright and nice as the day it was shredded, even though he had a large quantity packed together.

I would prefer a machine with a shredder head rather than a cutting head, for two reasons: First, the fodder is in better condition for the stock to consume. Second, because shredded fodder may be handled more conveniently than when cut.

If properly adjusted, the machines will husk the ears sufficiently close, so it may be safely stored in ordinary cribs without any danger of vermin committing any depredations in same. This, provided the machine is not crowded beyond its capacity. No machine of any kind can do its best work while over-crowded.

I have seen corn husked by machine that was very near perfectly clean from all shucks and silks. In fact, as clean as some men will ever do by hand. But it is generally a good plan, however, to have a man or boy at the corn elevator to sort out all soft or bad ears (which should not go into the crib with the good ears), and at the same time either pick the remaining shucks off, should any be found, or throw the ears back into the husking rolls.

All machines will shell more or less corn. But this can be brought to a very small item by properly adjusting the snapping rolls and by careful feeding of stalks to machine. One must never allow but one thickness of stalks to go into the machine at once.

It will also depend somewhat on the variety of corn being husked, as some varieties will shell a great deal easier than others. But with the common varieties of dent corn there should be very little trouble with shelled corn, if the operator attends to his business. The point where the most shelling takes place is at the snapping rolls. These rolls should have sufficient tension over them to prevent the drawing of the ears through.

But what shelled corn there happens to be is not wasted, as most machines are provided with a screen which allows the shelled corn to drop out. This corn should be cleaned with a fanning mill immediately after husking is over, and spread out a little for a few days to prevent it from heating. It is then all right for all ordinary purposes.

Manistee Co., Mich. GRANT OVERN.

(Much depends on existing conditions in determining the success or failure of the husker and shredder. Where one has plenty of room under shelter to store the shredded fodder in small lots or layers, the product will keep in prime condition, even during a moderately mild winter, if not too moist.)

We should by all means prefer to have the corn on the ear, rather than shelled, for winter storage. But the small amount of shelled corn, caused by the snapping rolls, may be properly cared for, if there is room to spread it out thinly on some floor where a free circulation of the atmosphere may be maintained.

For the farmer who has not plenty of room for storing the shelled corn and shredded fodder, we would advise going slow in the matter of running a large yield of corn through one of these machines. During a cold dry

winter there would be no trouble, but we should consider it quite a risk were the season warm and wet.—Ed.)

FORECASTS OF FROSTS.

BY DR. R. C. KEDZIE.

To the farmer, the stockman and the fruitgrower, the advent of periods of unseasonable and excessive cold is a matter of grave importance, both as regards the comfort and well-being of animal life and the preservation of vegetable life. The "cold waves" which sweep over our country, following up our great storms, when a vast body of cold air sweeps down upon us from the treeless and arid plains of the northwest, are recognized by the general government as so injurious to all agricultural interests that special warnings are sent out in advance of their approach in order that the farmer may guard against them.

The "cold wave signal" is a white flag with a black square in the center. When this signal is displayed the farmer and stockman should consider whether his crops and cattle are protected from the coming cold. What advantage can be secured by these cold wave signals I do not propose to discuss in this paper, but I venture the prediction that the near future will witness a wider display and better use of these storm signals. Commerce has read their lesson and thereby saved itself from untold losses, and it remains for agriculture to secure corresponding benefits.

WEATHER SERVICE MUST GIVE THE WARNING.

For the prediction of approaching cold waves and warning of their destructiveness the farmer must depend upon the United States Signal Service. No local observer can properly perform this work, because it requires a knowledge of all the meteorological conditions, past and present, in all parts of this continent.

LOCAL CONDITIONS.

Aside from the continental storms with their outriding blasts of cold, there are other conditions of danger for the farmer which are more local in their character and may be foretold with some degree of exactness by observations taken on the spot. These are the untimely frosts of late spring and early autumn which are matters of serious importance to the cultivators of the soil. The destruction of fruit buds in the spring and tender fruits in the fall, the killing frost of corn and potatoes in early growth, and the "black frosts" that ruin corn, buckwheat and field vines in the fall—these make fruitgrower and farmer alike dread their coming. Often after the destructive work of the frost for a single night there come days and weeks of pleasant growing weather, and the farmer feels that the single and untimely stroke of the destroyer was a cruel and needless blow. If he could only have escaped that single frost! It seems to him out of season, and not to follow any reasonable law, but to be an unaccountable freak of nature. If there could be found any timely and reasonable warning of the coming frost, it could be better borne even if he could not entirely escape its mischief.

The storms that bring in continental waves of cold are attended by great disturbance of the atmosphere, and the rise and fall of the barometer are marked features of such storms, and winds, clouds and rainfall accompany their passage. The cold wave is only an incident of such storm.

On the other hand the times of dangerous frosts, interjected into our alleged warm weather, are not heralded by cloud and storm, but come upon us when nature seems in tranquil mood.

RADIATION FROSTS.

These frosts are caused by local conditions which promote radiation of heat from the earth's surface into space and consequent cooling of the soil, and are independent of the disturbances caused by great storms. The air is dry and still; the sky at night is clear and cloudless, and the stars glitter like diamonds; the wind is asleep the whole night. It is in such season of quiet that the frost gets in its silent work. It seems a time of harmless quiet, but "the little foxes destroy the vines." It is of such a season of quiet that the farmer needs forewarning, since he may do something to ward off its effects if he recognizes the danger in time. These windless, cloudless nights in dry weather are the times of special danger from frost. Jacob of old recognized this relation of dry air and frosty

nights from his experience as a shepherd: "In the day the drought consumed me, and the frost by night, and my sleep departed from my eyes."

SAVED BY WATER.

Nature's balance wheel of temperature is water, whether in the form of solid, liquid, or vapor. In freezing, water gives out nearly 143 degrees F. of heat, and the ice in melting consumes a corresponding amount of heat. We thus find this paradox that freezing is a heating process and thawing is a cooling process. So much for the solid form of water, and its changes.

In the liquid form, it takes a larger amount of heat to raise the temperature of a pound of water through a given number of degrees than to warm through the same range of temperature a pound of any other liquid or solid. A jug full of boiling water holds more heat than a red hot stone of the same weight. The hot water gives off its heat more slowly, but it gives off more heat than the hot stone, and is thus a better foot-warmer for a sleigh ride than any hot stone.

It is in consequence of this large "specific heat" of water that it is so slow to warm up and so slow to cool off. It is for this reason in part that large bodies of water exert such a conservative influence on the neighboring shores. People now recognize the fact that a large body of water protects the shore line from sudden changes of temperature, and that in this way the Michigan fruit belt is fostered by Lake Michigan. The latent heat of water, and the slowness with which its temperature changes, make it a regulator of temperature for surrounding regions. Even small bodies of water, such as ponds and rivers, afford some protection to tender fruits and crops in their vicinity.

Water shows its most wonderful properties in its relation to the heat of vaporization and condensation. When water passes into the form of steam or vapor it consumes an enormous amount of heat. An ounce of water converted into steam and then condensed in 97 ounces of water will raise the temperature of this water 10 degrees Fahrenheit. That is, it takes nearly a thousand degrees of heat to change water into vapor, whether it is by boiling or evaporation, and when the vapor of water at any temperature is condensed into water, the same amount of heat is given off.

You thus see how water regulates terrestrial temperature. In hot weather evaporation goes on rapidly from every moist surface, which is thus cooled, while the heat is stored up for time of need in the form of water vapor, but when there is a call for this stored heat to counteract the cold, a portion of the watery vapor is condensed in cloud or dew, and the stored-up heat becomes available. In this way the beneficent dew becomes a warming pan for our chilling fields. No savings bank can compare with nature's method of deposit of heat in flush times, and withdrawal when needed, with little danger of "a run on the bank." Yet all this banking is literally on "watered stock."

WATER VAPOR RETARDS LOSS OF HEAT BY RADIATION.

Not only does the vapor of water mitigate cold by giving up its latent heat in condensation, but the indirect influence of the water vapor in the air in checking the escape of heat by radiation from the earth, is a powerful conservator of heat during the growing season. Heat associated with solar light has great penetrating power and will pass through most transparent substances with little obstruction, but dark heat has very little penetrating power, and is arrested by the air that contains a large amount of watery vapor. The vapor in the air (and clouds also) prevents the escape of heat by radiation from the soil. It is the blanketing influence of water vapor in the air that keeps us from frost during all the warm season. But for the vapor of water in the air we should have a frost every night in the year. "The removal for a single summer's night of the aqueous vapor which covers England would be attended by the destruction of every plant which a freezing temperature could kill."—Tyndall on Heat, p. 405.

During the warm season, the moist air at night is warmer than dry air for this reason. The nights in July and August, when the air is very damp, are distressingly hot and bed clothes are a burden. If the air became dry, it at the same time becomes cool and bracing.

(Concluded next week.)

For the Michigan Farmer.

SAWDUST AS AN ABSORBENT.

We think that sawdust as an absorbent cannot be beaten, and as applied to the land in the manure, we cannot see where it will have any deleterious effect.

We have used it for bedding and as an absorbent in our stables for over thirty years, almost constantly, and numerous brother farmers here for a longer or shorter period, and we yet have to see the first bad effect from its use.

The sawdust used has been from all varieties of timber which grow in this vicinity. To be sure, if this sawdust had been drawn by the wagon load, directly to the field, and applied thickly, we doubt not you would have seen its effect for the worse in plant growth.

But where it is used in the stables to take up the urine and filth, we cannot see in a long series of years, any bad effect in any form.

In brief, our reasons for using are: First, it costs nothing but the hauling. Second, it is the best absorbent we have ever found. In stables with plank floors, it largely saves the urine, the most valuable part of the manure, from waste; and on cement floors it keeps them clean and neat. Third, when applied to clay land it is a great help in loosening it up, and making it friable. No one can truthfully dispute these facts.

Where can you find any other substance that practically costs nothing that has so many good qualities and no bad ones? As for us, we shall stay by sawdust for an absorbent as long as we can get it for the drawing, unless in the future we should see some bad effect from its use.

Van Buren Co., Mich. FARMER.

(We also believe in sawdust, and would use it by the wagon load, could we obtain it. It was so scarce here last winter that we had difficulty in securing enough to cover our ice. We fear the same difficulty will obtain during the coming winter.)

While traveling through the northern counties last winter we saw thousands of tons of sawdust and refuse from the mills, that could be well utilized and appreciated down in southern Michigan.—Ed.)

When writing advertisers mention Mich. Farmer.

FALL CHANGES.

How to Guard the Health in All Sorts of Weather.

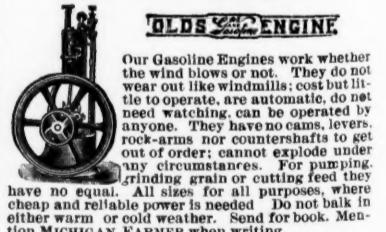
Fall is a season of sudden changes and therefore of peculiar dangers to health. The noons are hot, but the nights are chilly. To-day it is damp and to-morrow cold. A debilitated system may soon be the victim of colds, fevers or pneumonias. Keep on the safe side by purifying your blood and toning up your system with

Hood's Sarsaparilla

The best—in fact the One True Blood Purifier.

Hood's Pills cure Sick Headache 25 cents.

CHEAPER THAN WIND.

Our Gasoline Engines work whether the wind blows or not. They do not wear out like windmills; cost but little to operate, are automatic, do not need watching, can be operated by anyone. They have no cams, levers, rock-arms nor countershafts to get out of order; cannot explode under any circumstances. For pumping, grinding grain or cutting feed they have no equal. All sizes for all purposes, where cheap and reliable power is needed. Do not balk in either warm or cold weather. Send for book *MICHIGAN FARMER* when writing.

P. F. OLDS & SON, Lansing, Mich.

THE FARMER'S FAVORITE



Do you enjoy building fires in two or more stoves all winter? Buy an Alexander Furnace and do away with the annoyance.

Special Offer Up to Nov. 1st.

Write us for particulars.

ALEXANDER FURNACE CO., Lansing, Mich.

Live Stock.

STATE FAIRS AND THE IMPROVEMENT OF LIVE STOCK.

It has been quite apparent to those interested in the improvement of the live stock of the State that the recent State fairs have failed to draw out a good representation of the flocks and herds owned in Michigan. This has been more especially noticeable in the case of cattle and some breeds of sheep. In the breeds of beef cattle at the last State fair Michigan exhibits were so small as to be ridiculous in a State once noted for its fine herds. A stranger visiting the last State fair would naturally conclude that Michigan had very few herds of beef cattle. One herd of Shorthorns, one of Herefords, and two of Galloways comprised the lot, and in the first two classes the great bulk of the premiums went to Ohio, Indiana, and Illinois. Of course the people saw some fine Shorthorns and Herefords, and to that extent might rest satisfied. But when we come to consider that the State fairs are primarily intended to aid the agricultural interests of Michigan, of which live stock is one of the most important, the question at once comes up, are they accomplishing the object for which they were designed? In all departments of live stock the last and preceding State fair did not bring out as good representation from this State as for the previous fifteen years. In other words, we have gone steadily backward, and with the elimination of four herds of cattle at the last State fair, Michigan would not have had a single representative in the classes for the great beef breeds. If she did not have any more within her borders no fault could be found; but the facts are she could have shown twenty-five to thirty herds if their owners could only be induced to exhibit.

That being the case, the next question is, why do they not exhibit? To put the answer in a few words, simply because the prospective remuneration for the cost and trouble of putting their herds into shape was not at all commensurate with the expense. Breeders cannot afford, any more than other business men, to go to heavy expense in preparing their herds, paying transportation charges, and the necessary extra help and current expenses on the fair grounds, if they are not certain of securing some return for the outlay. Of course some people will say, "Oh, they should be patriotic enough to do this, and come out and exhibit anyway." Patriotism and public spirit are all right, but neither one will pay expenses, and the breeder who relies upon them for remuneration will probably be sold out by the sheriff. They cannot be expected to carry off premiums with their cattle only in good breeding condition while a few herds and flocks, fitted entirely with a view to prize-winning, are their competitors. These show herds have practically driven out all the others from competition in several of the States, and travel a regular circuit each season for the purpose of winning all the money offered in their classes, which is sufficient to make good the losses sustained through the usefulness of the animals being ruined by over-fitting. In fact the State fairs of Ohio, Michigan, Indiana, and Illinois are practically controlled by these traveling exhibition herds, and all home competition is eliminated. It is just the same as if Star Pointer and Joe Patchen were to go down the circuit in the free-for-alls; no other horses would enter, except, perhaps, one in each place, in the hope of securing third money. How much interest would the public take in such races after the horses had met several times. The fitted herds which this year carried off the bulk of the premiums at the Michigan State Fair did the same in New York, Ohio, Indiana, and Wisconsin. The fight was entirely between them, and the local exhibitors were not in it.

This condition of affairs has been kept up until we have two or three fitted herds at all the State fairs, the dates being carefully arranged to accommodate the "ringers." Those who make a business of breeding and must look after the breeding qualities of their stock will not compete against these show herds, and the interest in the live stock classes yearly becomes less. There are not a dozen spectators around the cattle rings now where there used to be hundreds. Farmers do not care which of the "ringers" get

the premiums. They look at the animals in their stalls, admit their beauty and fine fitting, and pay no more attention to them. If their neighbors were exhibiting they would be around the rings, and taking a keen interest in the work of the judges.

With all deference to the management of these State fairs, let us ask if they are doing anything to encourage the breeding of improved stock among the farmers of the various States? Is not the interest becoming less each year, and is there not danger of it becoming entirely extinct? Is it not time some radical measures should be taken to put an end to present unsatisfactory conditions?

AMERICAN DRESSED BEEF ABROAD.

The dressed beef exported from the United States has had to fight its way into recognition against the strongest prejudice and the bitterest opposition of interested parties in the countries to which it was shipped—notably Great Britain. At first cattle were shipped alive, but by trumped up charges of disease, the British Parliament was induced to place such severe restrictions upon American live stock that it looked as if the trade would have to be abandoned. But shipments of dressed carcasses in refrigerator cars had by this time shown its advantages, and as the live cattle trade decreased, dressed beef shipments increased. The quality of the meat was finally proved so superior that even the prejudiced British public has come to recognize its excellence, and its consumption is steadily increasing. The following from the Mark Lane Express, an acknowledged authority, shows conclusively the high standing American beef now enjoys in the English markets:

The chilled beef which the Americans send us is much of it so good in quality that some managers of hotels and restaurants actually prefer it to any but "prime Scotch." Then the American cattle are now so well bred that those received at Deptford and Liverpool compare well with the bulk of home grazed. This was admitted by a practical agriculturist before the commission on foreign meat making, who, like the prophet Baalam, instead of pronouncing a curse, felt impelled to bless. He admitted that he had inspected the foreign cattle received at Liverpool, and he was not prepared to state that they were at all inferior to the generality of home-fed beasts. In fact, he could not tell the difference, and it was his belief that if they remained in the lairs a few days, long enough to get rid of the effects of the sea sickness, their meat would be as good as English. The meat of the Argentine cattle, so far from being despised, is becoming a big factor in account, likely to swell to immense proportions in the future, both for cattle and sheep, and the graziers of the River Plate are improving the quality of all their stock so rapidly by the aid of British pedigree bulls and rams that the meat of their imported stock is likely to become better every successive year. In fact, it is the Republic of Argentina that our graziers have the most to dread in the future. The United States cattle and sheep may possibly fall off, although considering the resources of western prairies not yet occupied this appears somewhat doubtful, but the resources of South America are almost unbounded, and only want development for Europe to be supplied with good meat from that part of the world at even lower prices than are paid now. Beef prices this summer have no doubt been a little better than for a long time past, but statistics do not prove that this is due to any lessening in foreign meat imports, while if we take the wretched bad trade in British beef for two or three years past we shall find it difficult to discover a cause other than the large importations of good meat from abroad.

It's big betting that the lesson that feeders of lambs this year that were either too shiftless to castrate lambs or let it go by default for some other reason, will be lost on them, and the same old story will be repeated next year. Buyers made anywhere from 25 cents to 40 cents per cwt., against these bucky lambs in favor of good straight lots of ewe and wether lambs of the same weights and quality.—Buffalo Mercantile Review.

After serious illness Hood's Sarsaparilla has wonderful building up power. It purifies the blood and restores perfect health.

LIVE STOCK NOTES.

At the sale of the Earl of Rosebery's Shorthorns, Fragrant Blossom, a 6-year-old cow, a prize winner, and her heifer calf sold for 120 guineas and 65 guineas respectively. So it will be seen the "royal breed" yet holds its own in the hearts of the English breeder.

While Ireland is reported to be suffering from the loss of its grain and potato crops, her farmers seem to be steadily adding to the number and improving the quality of their live stock. According to the reports of the registrar-general cattle show an increase of 55,802 head, sheep 76,870 head, and pigs a decrease of 77,360 from the previous year. These returns relate to live stock between 1896-97, and also show a decrease of 19,683 of horses and mules. At a meeting of the Irish Cattle Traders' and Stockmen's Association in Dublin in the first week in September a report was read which stated that the number of cattle and sheep exported this year so far was much larger than during the corresponding period of last year. Heretofore there has been no direct shipment of cattle from Irish ports to London, all going by the way of Liverpool, but now arrangements have been completed for that purpose, which will be advantageous for both England and Ireland, as then the latter will have another market without transhipment by rail from Liverpool.

Veterinary Department.

CONDUCTED BY DR. W. C. FAIR.

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case fully; also name and address of the writer. The initials will only be given. When an answer is requested by mail it becomes private practice, and a fee of one dollar must accompany the letter.

Ringbone.—Seven-year-old horse has a large bunch on fore leg just above hoof. I am told that it is a ringbone. How should it be treated? A. W., Lansing, Mich.—Blister ringbone once a week with Gombault's caustic balsam.

Capped Hock.—Three-year-old colt got capped hock last winter from kicking in the stable. Swelling remains on point of hock. Can the swelling be reduced? If so, what shall I apply? W. J., Monroe, Mich.—Apply tincture iodine every two days. You will find it very difficult to reduce leg to its normal size.

Wind-galls.—Young driving horse has a few small wind-galls. I think they are caused by driving. However, I am anxious to keep his limbs entirely clean. What can I do to remove them? A. W., Midland, Mich.—Apply equal parts extract witch-hazel, alcohol, and tincture of arnica once a day after he is driven. If you can let him rest for a few weeks during the winter, blister him. That will reduce them.

Sidebone.—Saddle-galls.—Horse was taken lame five weeks ago. I noticed a small bunch about as large as a hickory nut on outside of right front foot just above the hoof, which I have been told is a sidebone. He had not been shot since early last spring until about two weeks ago. Horse's neck became very sore from the collar three years ago and has been very tender ever since, becoming sore if he is worked any length of time. A. C. F., Ypsilanti, Mich.—Apply one part red iodide of mercury to eight parts lard three times a week to sidebone. Apply one ounce acetate of lead, one ounce sulphate of zinc, one quart water to sore shoulder twice a day.

Hog Cholera.—One of my neighbors is losing his shoats. First, they act dumpish, stagger, and refuse to eat;

grow gaunt and thin; linger along a few days and die. Bowels are first very much constipated; then become very loose. My hogs are in clover just over the fence. One of mine took sick and began to act dumpish. Will drink a little milk and bran; does not move out of his nest. What is the trouble, and is there any cure? Can I give the others any preventative? W. S., Michigan.—I think his hogs suffer from cholera. Separate the unhealthy hogs from the well ones. Give equal parts powdered charcoal, sulphate of iron, nitrate of potash, and ground gentian in their feed. Also disinfect the pens and grounds thoroughly with zineoleum and mix a small quantity with their drinking water.

Sore Throat.—Rheumatism.—Pigs five months old have some disease. I called a veterinarian. He failed to diagnose the trouble correctly. The first symptoms are dullness and lameness all over. The only fever that can be detected is that the eyes are inflamed. Hogs are unable to squeal. Are sick for thirty-six to forty-eight hours. Eat a little all through their sickness. No swelling anywhere. No symptoms of cholera; bowels all right. Disease seems to be contagious; one after another in the same lot becomes sick. They have no cough or sneezing. They do not seem to suffer very much pain. E. L. N., Francisco, Mich.—Your pigs die either from sore throat or rheumatism; very likely sore throat. Give two grain doses quinine every two hours, fifteen grains salicylate of soda three times a day. Apply equal parts aqua ammonia, turpentine, and raw linseed oil to throat twice a day.

The Annual Announcement of the Ontario Veterinary College for session 1897-98 has just been issued. We are pleased to find that this well-known and popular institution has recently been affiliated with the University of Toronto, and that its prospects for a good attendance of students at the approaching session are favorable. The session will commence on Wednesday, October 13th.

WHEN writing to advertisers please mention that you saw their advertisement in the MICHIGAN FARMER.

ANCHORWOOD FARM, Flint, Mich. Registered Oxford Down sheep from World's Fair-prize-winning stock; registered Tamworth swine. A few choice Oxford Down ram lambs and one yearling ram for sale. Also a registered yearling Jersey bull and registered Jersey bull calf. Address ANCHORWOOD FARM, Flint, Mich.

DUROC JERSEY SWINE. Spring and fall sexes. H. D. HALL, Martin, Mich.

World Beater Herd of Chester Whites. My strain trace to prize-winning herds that won \$2,170 at the World's Fair. MARTIN VOGEL, JR., Fremont, Ohio.

RAMBOLLETT Breeding Ewes for Sale.—I have 340 Rambollet ewes and ewe lambs, eligible to register. I wish to dispose of 200 of them. Address or call upon A. H. PADDOCK, Commerce, Mich.

PUBLIC SALE Tuesday, Nov. 9, '97, of cows, 50 heifers and 20 bulls. Will go to highest bidder, at farm of S. Duncan, near Windsor, Shelby Co., Ills. Catalogue on day of sale. WEST & DUNCAN.

OLDOAK KRAAL, CHESTER The home of WHITE HOGS of special type and merit. Sires of the best eastern stock; dams of the best western stock. Something new, rare and practical. Prices reasonable. Correspondence solicited. H. G. SELLMAN, South Lyon, Oakland Co., Mich.

THE ONTARIO VETERINARY COLLEGE, Limited, Temperance St., Toronto, Canada. Affiliated with the University of Toronto. Presidents—Governor-General of Canada and Lieutenant-Governor of Ontario. The most successful Veterinary Institution in America. All experienced teachers. Fee, sixty-five dollars per session. Session begins October 13th. Apply to Principal.

ANDREW SMITH, F. R. C. V. S., Toronto, Canada.

LUMBER to sell direct to the Farmer or Contractor. Long Barn Timbers, Barn Siding, Flooring, Ceiling, Siding, Lath and Shingles. Write for prices. C. S. BLISS & CO., Saginaw Mich.

Farming Lands In Montcalm County Good lands near good markets and railroads. County is well settled and has fair roads. For particulars call on or address STEVENS & TOWLE, Montcalm County Abstract Office, Stanton, Mich.

PROSPERITY AND SEPARATORS



THE DE LAVAL SEPARATOR CO., RANDOLPH AND CANAL STS., CHICAGO.

74 CORTLAND STREET,
NEW YORK.

Don't forget that you have been promising yourself and family that Cream Separator just as soon as you had a little money in sight and things looked brighter. They look brighter for the farmer now than for ten years past. Don't put off so wise and safe a purchase a day longer—you can make it now and there could be no better time. Put it in to-day and it begins saving money for you to-morrow. It will save and make money faster in proportion to its cost than any other investment you ever made. Now that the time has come don't make the mistake of trying to save a little by buying an imitating second or third class machine which is "cheap" on paper and in first cost only. Get the best and hence the cheapest in that it will save you most and serve you longest. If you are in doubt in any way try and see for yourself. Send for new "Baby" or Dairy catalogue No. 257 and any desired particulars.

The Horse.

THE RUSSIAN TROTTER.

An article on the Russian trotter has been going the rounds of the agricultural press, without credit, so we cannot say where it originated. This article says:

"It would be well if the breeders of American saddle and light driving horses would import some of the Russian stock to improve their animals. There has been too much running to British hackneys and thoroughbreds in the United States. It is a question to-day whether the Russian trotter is not superior to the American trotter, with all his renown. Attention to mere speed and trotting races has never been given in Russia as it has been in the United States. The Russians have contented themselves with breeding superb, beautiful, perfect trotting and saddle horses, without much reference to their jockey and racing qualities. The result is perhaps the most beautiful and intelligent horse-flesh to be found on the earth to-day."

"A few very wealthy horse fanciers are lately importing Russian animals to cross with the American trotter. When it comes to good looks, the American trotter cannot equal his Russian brother. The Russian is descended from the pure Arabian. The czar's government has been in the business of horse breeding for centuries and has brought it to a perfection unknown elsewhere. The late Senator Stanford of California understood this, and at the time of his death had begun to import Russians for his Palo Alto stud."

It is very probable the writer of the above never saw a Russian trotter, and his knowledge of how the breed originated seems very limited indeed. As a matter of fact the Russian trotter is a product of the cross breeding of the Arab, Danish and Dutch coach mares and the English thoroughbred. There is more of the blood of other breeds in the Russian trotter than of the Arab. The breed was originated by Count Alexis Orloff Tschismensky, who, in 1775, imported an Arabian stallion named Smetanka, reported to have been of unusual size. A Danish mare was bred to this stallion and the produce was a horse known as Polkan I. This horse was mated with a Dutch mare and the produce was Bars I, the progenitor of the Orloff, or Russian trotter. No other infusion of Arabian blood has been made since the original stallion, grand sire of Bars I, which latter horse could not have more than 25 per cent of Arabian blood. The lines of breeding very closely follow those of the Bashaw, Patchen and Clay families of the American trotter. To begin the importation of Russian trotters would be to go backwards. In the speed trials in Russia between the Russian and American trotter, the latter was shown to be the fastest and most lasting, winning at all distances from the finest Russian trotters in that country. It might be all right for a fad, but from a business standpoint it would be nonsense.

SECRETARY WILSON ON HORSE BREEDING.

The live stock of a state is quite suggestive of the direction in which its industries are tending. I have been studying these industries for a period of over ten years, and so I know in what direction the people of Ohio are going with regard to domestic animals on the farm. In 1888 the state had 723,156 horses, valued at \$63,132,673. In 1897 the state has 701,993 horses, valued at \$25,737,791. This heavy decrease in the value of horses, while the number remains pretty much the same as ten years ago, is quite suggestive. The basis of horse production is grass, grains, good water, and the intelligence of the horse-grower. What is true regarding the state of Ohio during the past ten years may be applied to almost all the other states. The state has not reduced the number of horses very materially, but the value of them has decreased very heavily. The world's market for horses fixes the price, and we are not producing the horses that the world wants to pay good prices for. The heavy draft horse, the coach horse, and the saddle horse are wanted at good prices by Europeans. Agents from those countries have searched the United States in

vain for supplies along these lines. We have not the horse that the European wants; that is, we have not a sufficient per cent of them. The horse with which the western people improved the country and their farms, and served the purpose admirably, are too small for European demand, although they have many excellencies that commend them to ourselves. We should produce what the people think they should buy. We have cheaper grass and grains than any other people who can produce the draft horse, the carriage horse or the saddle horse fitted for European armies. We have sufficient intelligence to breed, rear, and train horses, but we have a pre-conceived notion about what other people should buy and we have been producing along that line. If the people of Ohio will carefully study the wants of the people who need horses this class of domestic animals will be found quite as profitable as any other. The European does not want a speed horse to any great extent, and if large quantities of them are sent abroad of course the market price will be reduced. An excellent plan would be for the farmer to do his own farm work with suitable brood mares, and the young animals can earn a considerable proportion of their keeping between the ages of three and five years, when they will bring a very remunerative price in the foreign markets.

HORSE GOSSIP.

Boston dealers report a scarcity of heavy draft horses in that market, running from 1,600 to 1,800 pounds, and that prices for good ones are strong and advancing.

Hamburg and Malvolio are thought to be the best two-year-olds in training, and a match between them is on the tapis. Hamburg is an eastern, and Malvolio a western horse.

Last week Englishmen bought 35 head of good driving horses in the Boston market for export. A special sale of Kentucky driving horses in the same city gave an average of \$330 to \$475 per head.

The department of agriculture attributes the heavy falling off in value of horses not so much to the bicycle and to electricity as a motive power as to greatly increased production of western ranges and the facilities which railroads have given in transportation to market. On the contrary, Prof. Davenport, of the Illinois University, contends that it is not the large supply which makes horses cheap, but the lack of good ones. No one who knows him will dispute the Professor's lack of knowledge on the subject.

Galtee More, the Irish-bred horse which won the Derby this year, is the seventh horse to earn the "triple crown" on the English turf by capturing the three big events—Two Thousand Guineas, Derby and St. Leger. The "triple crown" was first won by West Australian in 1853. Gladateur won it in 1865; Lord Lyon, in 1866; Ormonde, in 1886; Common, in 1891, and Isinglass, in 1893. Galtee More was the first Irish-bred horse to win the Derby. He has also won this year the Jubilee, the Newmarket and the Prince of Wales' stakes. He is not a large horse, being about 15.2, but strongly built and evenly balanced. He stands well and is of the wear and tear sort.

According to the Department of Agriculture from 1889 to 1893 the number of horses in Montana, Wyoming, Colorado, New Mexico and ranges farther west, increased from 1,479,768 to 1,972,532, about 33% per cent. The average price of horses in the United States in 1896 was \$59.86, from 1888 to 1893 from \$70.59 to \$74.64, the highest price being that of \$84; and by 1892 the average value was reduced to \$65.01. After 1893 began the heavy decline. During that year the average price was \$61.22; in '94, \$47.83; in '95, \$46.29; in '96, \$33.07, and at the beginning of '97, \$31.51. These cheap prices have checked production in the South and East. The department has the following reasons for considering the outlook encouraging. In the West since 1893 the number of horses has fallen from 1,972,523 to 1,626,402, or nearly 18 per cent. Exports to Europe have grown from 3,000 a year to 28,000 in 1896. The western horse having cost so much of his value the ranges will be devoted to more profitable industries. The demand for certain better classes, draft and driving horses, good saddlers and cavalry mounts has a growing improvement.

The Arabian horse has been used in developing the military horses of all the European countries, and is the foundation, even the thoroughbred horse, which has deteriorated to a mere shadow, while the Arab has remained the same in size, color, stamina and wonderful prepotency for a thousand years. The Arab is increasing in popularity in England, and an importation of the richest blood has been made to England, direct from royal studs in Arabia. There are able champions of the breed in England and in America.—Western Agriculturist. The able champions of the breed in both countries have never been able to produce an Arab with the size, substance, speed, and lasting quality of the English thoroughbred. Even the progeny of the Arabian stallions and thoroughbred mares have never been able to accomplish anything on the track or in the breeding stud, and hence all attempts to improve the thoroughbred by the infusion of fresh Arabian was long since abandoned. If the thoroughbred has deteriorated to mere shadow, the shadow seems to be able to beat the substance very easily, if the Arabian represents the latter.

Relative to the Chicago horse market, reports say there was a fair demand last week at steady to stronger prices. The best horses of all grades and classes are the ones wanted and sell as soon as they arrive. Weight is inquired for, and if the horse has quality sells for a fair price. Foreign buyers are taking all the best horses, paying for good to extra drafters from \$90 to \$150; export chunks of 1,200 to 1,400 lbs. still selling steady at \$65@100; good plain 1,300@1,500-lb. horses at \$50@85, and extra bone, \$100; 1,100@1,200-lb. eastern chunks and common drivers, \$45@75. There is some demand for big, rugged 1,500@1,600-lb. horses for the north at \$60@65, according to bone and quality. The demand for light, thin, and blemished horses is weak. Prospects look very fair for the near future at above figures. The eastern markets are deficient of the better class of horses, weighing from 1,600 to 1,800 lbs.; considerable inquiry for such and not on the market. It would be well for dealers to correspond with western dealers with intent of having forwarded such horses as will meet the demand and pay a fair margin.

When writing advertisers please mention that you saw their advertisement in the Michigan Farmer.



A clean, noncrushing cut.
WEBSTER & DICKINSON, Christiana Pa.

Horse Owners Should Use GOMBAULT'S

Caustic Balsam

The GREAT FRENCH VETERINARY REMEDY

A Safe, Speedy and POSITIVE CURE.



Prepared exclusively by J. H. Gombault ex-Veterinary Surgeon to the French Government.

As a HUMAN REMEDY for Rheumatism, Sprains, Bone Fracture, etc., it is invaluable.

WE GUARANTEE that one tablespoonful of **Caustic Balsam** will produce more actual results than a whole bottle of any liniment or sprain cure mixture ever made.

Every bottle of **Caustic Balsam** is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by express, charged paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

McLAUGHLIN BROS., COLUMBUS, OHIO.

We have imported more stallions from France since 1893 than all others combined. Write or call on us if you want the best of either

French Coachers or Percherons.

When writing to advertisers please mention that you saw their advertisement in the Michigan Farmer.

BREEDERS' DIRECTORY.

CATTLE.

A. J. J. C. BULL CALVES—some from tested best families. B. F. R. cockerels from best strains. COLON C. LILLIE, Coopersville, Mich.

B. F. BATCHELOR, Oceola Center, Livingston Co., Mich., breeder of Shorthorn cattle, Berkshire hogs, and B. P. Rock fowls. Stock for sale.

J. F. & E. W. ENGLISH, Clarksville, Mich., breeders of registered **RED POLLED CATTLE**. Oxney and Sultan head the herd.

J. M. CHASE, Muir, Mich., breeder of **Red Polled Cattle** and **POLAND-CHINA HOGS**. good yearling boars for sale, \$15 each.

JOHN LESSISTER & SONS, Cole, Oakland Co., Mich., breeders of Scotch bred Shorthorns. Fine young bulls and heifers for sale. Also Shropshire sheep.

REGISTERED HOLSTEINS of both sexes and all ages for sale from my **World's Fair** prize-winning herd. 50 head to select from. Prices low. Terms easy. B. F. THOMPSON, Detroit, Mich.

Lakeside Herd Holstein Friesian Cattle. 35 head registered cows and heifers for sale. Two young bulls. Calves either sex one week old \$10 each. WOODMAN & BLAIR, Manistee, Mich.

SHEEP.

GEO. C. WOODMAN, breeder of **Dorset Horned Sheep**. Four choice rams for sale. Address H. WOODMAN, North Lansing, Mich.

PURF Bred Hampshire Rams from imp. stock at a bargain for the next 60 days. Inspection invited. J. H. TAFT, Mendon, St. Joe Co., Mich.

LINCOLN Sheep and Chester White Swine. Either sex and all ages for sale. Write before purchasing elsewhere. A. H. WARREN, Ovid, Mich.

OXFORD DOWNS FOR SALE—both sexes. No better individuals or better bred on the continent. D. D. AITKEN, Flint, Mich.

\$1,500 buys 150 choice **Registered Shropshire shires**. None better at any price. Come and see them at once. **BARGAIN**. BOX 25, VERNON, MICH.

SHROPSHIRE HALL STOCK FARM.—A grand lot of yearling rams from imported stock, good enough to head any flock. Also yearling and two-year-old ewes bred to choice rams; ewe and ram lambs; none better. L. S. Dunham, Concord, Mich.

HOGS.

COUNTY LINE HERD OF POLAND-CHINA SWINE.—Pigs ready to ship. Young sows bred for sale. E. D. BISHOP, Woodbury, Mich.

FOR early-maturing, well-finished **POLAND-CHINA** March and April pigs write to L. F. CONRAD, Wacousta, Clinton Co., Mich.

LARGE ENGLISH BARKSHIRE SWINE of the best strains for sale. Write for breeding and prices. C. E. PAULTHORP & CO., Mt. Morris, Mich.

LARGE ENGLISH BARKSHIRE SWINE, highly bred, from leading families. Write for prices. V. E. HACKNEY, Mt. Morris, Mich.

R. M. CROSS, Ovid, Mich., breeder of Victoria R. swine. Stock for sale. Breeding stock all record-ed. Reasonable prices. Correspondence solicited.

LARGE ENGLISH BARKSHIRES and SHROPSHIRE SWINES.—Stock highly bred. Call or address MERCHANT KELLEY, Woodstock, Mich.

POLAND-CHINAS.—March, April and May pigs. Pairs not skin. Prices reasonable. F. M. PIGGOTT, Fowler, Clinton Co., Mich.

HERE is where you find extra good Poland-China spring pigs of best breeding for sale. A. A. WOOD, Saline, Mich.

POLAND-CHINA PIGS ready to ship. Send E. A. CROMAN Box 99, Grass Lake, Mich.

GRAND RIVER HERD OF O. I. C. JOHN BERNER, Prop., Grand Ledge, Mich. My stock comes direct from L. B. Silver Co. Write for prices.

POLAND-CHINAS.—Large, and popular strains of blood. Quality and breeding combined. Now booking orders for spring pigs. L. W. BARNES, Byron, Shiawassee Co., Mich.

THE PLUM HILL HERD of **Berkshire swine**. Shorthorn cattle, B. P. Rock and S. P. Hamburg fowls. Stock and eggs for sale. C. M. BRAY, St. Johns, Mich.

DUROC-JERSEYS.—Pigs ready to ship. From highly bred registered stock. Pigs not skin. J. H. BROWN, Climax, Mich.

N. A. CLAPP, WIXOM, MICH. BREEDER OF Large English Berkshire Swine. Write for prices.

WE can give you **BARGAINS** in **POLAND-CHINA PIGS** and B. P. R., two grand yards. Eggs 15 for \$1. WILLARD PERRY or Hastings, Mich.

Special Sale of Chester Whites at CASS VALLEY FARM. Lot of fall and spring pigs, dandies, at 1/2 their value. Write to-day and secure a bargain. W. W. BALCH, Deford, Mich.

I SOLD CORWIN KING for \$200 at 7 years. He now heads the oldest herd in Iowa. If you want TOP POLAND-CHINAS write WM. H. COOK, Waterford, Mich.

W. O. WILSON, Okemos, Mich., proprietor of the Michigan Central herd of IMPROVED CHESTER WHITES. Choice pigs of March and April farrow. either sex and pairs not skin. Write me just what you want or give me a call if convenient.

DOGS FOR SALE

All varieties of Thoroughbred Sporting, Hunting, House and Watch Dogs. Trained, untrained and pups. Send stamp and state kind wanted.

JAMES BETTIS, - Winchester, Ill. CAREY FARM KENNELS.

Sheep and Wool.

THE OUTLOOK FOR SHEEP.

To the Editor of the Michigan Farmer.

After long absence I return to find your paper of much interest still to the stock breeder as well as the general farmer. In my sojourn in Sonoma Co., Cal., I found far less of cattle, horses and sheep than on a former visit in 1881. Prominent butchers told me they were getting many of their cattle from Nevada, whereas, until very recently, California had cattle to far more than supply her home market. Horses of the commoner grades are plentiful and cheap yet, but I saw no colts, either suckers or yearlings, on the mountain ranches, and very few in the valley stables, save now and then a choice one from some favorite strain.

Sheep, which are mostly fine wool grades, are still more depleted, both in quality and in numbers; but few are keeping up their flocks. I was informed by substantial feeders and breeders, as well as shippers, that such was the case in regard to the animal industry in all the states and territories lying east of them, save in some favored ranges, where raising stock is done with comparative ease.

Mr. R. D. Stephens, of Flint, and myself, have also been to Western New York, and among a limited number of sheep breeders there. (Alas, so many of the substantial ones are gone.) Mr. S. attended the New York State Fair at Syracuse, where it is said a larger show of fine sheep were on exhibition than ever before. Our object was to find something to continue our improvements, which low prices have not abated but given opportunity for more rigid culling. We purchased "Big Wrinkley," bred by Peter Martin, and a yearling ram, sired by Champion 2074. I enclose samples of fleeces.

Thanking you for the recognition given the sheep interests in the past, and hoping breeders and wool-growers may have a season of prosperity in the near future which will warrant a more liberal patronage of your paper, I am, very respectfully,

D. P. DEWEY.
Grand Blanc, Mich.

The samples sent by Mr. Dewey were received. That from Big Wrinkley is very heavy, the oil of a buff color, evenly distributed, and the fleece of fine quality. The only fault we could find with it is that it has too short a staple. The fleece weighed 34 lbs. at a year's growth.

The other fleece is from a yearling sired by Champion 2074, and on the dam's side tracing to the Venus family of the Martin flock. In style, quality, and even distribution of oil, this is an ideal fleece. Were it half an inch longer it would leave nothing to be desired. The fleece weighed 16 lbs. 8 oz.

For the Michigan Farmer.

PLAN OF SHEEP HOUSE.

I herewith submit a plan and description of a sheep house for insertion in The Farmer. The size of the building to be 24 feet by 32 feet; height of posts, 14 feet. The frame to be set on a stone wall 12 inches thick and high enough to keep the sills free from the ground. The frame to be composed of three bents. Fig. 2 shows end frame for one end. Other end is the same except the two doors in the corner are left out.

The outside posts (P) and beams (B) are 8 inches square. The sills (S) and plates (T) are 7x8 inches, and the girts (G) and posts (L) are 4x6 inches. Rafters and studding to be 2x4 inches. The overlays (O) can be hewed on both sides, and to be 7 inches thick at ends, and to rest on the beams. Roof to be laid with No. 1 pine or cedar shingles laid 5 inches to the weather. The outside to be boarded with planed lumber and to be boarded on inside with rough lumber. The space between to be filled with sawdust which will make it a great deal warmer and which is very essential at lambing time.

Fig. 1 shows the ground plan showing the arrangement of pens, racks, feed box, stairs, alley, doors, windows, etc. "A" represents the pens which are 10x16 feet each and which are connected with each other and with the alley by doors. "B" is the alley which is 4 feet wide and runs the entire length of the house. "C" are the racks which will be described farther on. "E" is the chute for putting hay down

in. It is 3 feet square made close except the front, which should be open for four feet at the bottom to allow of hay being taken out. "F" is a box for holding grain. Is 6 feet long, 14 inches wide (inside) and 3 feet high. It is convenient to have a partition in the center. "G" is the stairs leading to the loft. "W" are the windows, of which there are ten. They should be made of 4 lights, each 12x14, and made to slide back into the wall. The two in the gables to have ropes to open and shut them with. The two doors from alley and the two doors from pens to outside are 3 feet by 6 feet, and are to

1,000 ft. sheathing @ \$12 per M.....	8.00
1,600 ft. siding @ \$12 per M.....	19.20
1,400 ft. lumber @ \$10 per M.....	14.00
10,000 shingles @ \$2.50 per M.....	25.00
Painting.....	6.00
Hardware, windows, etc.....	15.00
Labor (carpenter and teaming, etc.)	27.60

Total \$140.00

The estimate is made on what the material would cost in this community, and making a liberal allowance for labor etc., and is more than and less than it will cost in other vicinities.

Have some light gates made for use to divide the pens during lambing time. This house will hold forty sheep conveniently, and the plans can

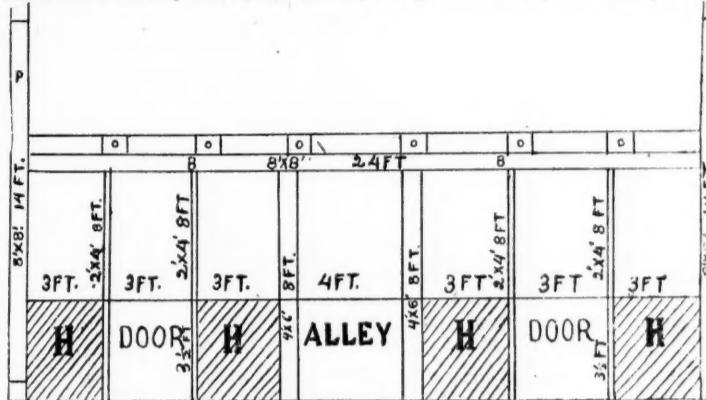


FIG. 3.—View of Center Bent.

be either enlarged or made smaller to suit the builder.

Tuscola Co., Mich. ARCH. MARSHALL.

FIRST ANNUAL SALE OF SHROPSHIRE SHIRES.

The first annual sale of the Shropshire Sheep Breeders' Association, of Concord, Jackson Co., will be held at that place on October 13th. The offering will consist of about 200 yearlings and 2-year-old imported rams and ewes from the flocks of Mansell, Minton, Bowen, Jones, Farmer and Thomas, of England, and the McFarland, Diehl, Wigington, Sturdy, Dixon, and McDonald, of Canada. These are all selected animals, of the finest breeding and individuality. In addition to the above, there will be offered some choice selected rams and ewes from the L. S. Dunham flocks of Concord, all bred from imported stock, and in every way worthy of their ancestry.

This sale offers to farmers and breeders who want to increase their flocks, or to secure some new blood of approved strains, an elegant opportunity to get just what they want. The choice young imported rams should every one go to head good Michigan flocks. They are all wanted. And to those farmers who are thinking of starting a flock of this favorite mutton breed, we need hardly point out that this is the time to start and start right. A few good young ewes will surely prove a remunerative addition to the farm, and increase in numbers and value so quickly that money expended for them will come back with big interest in a very short time.

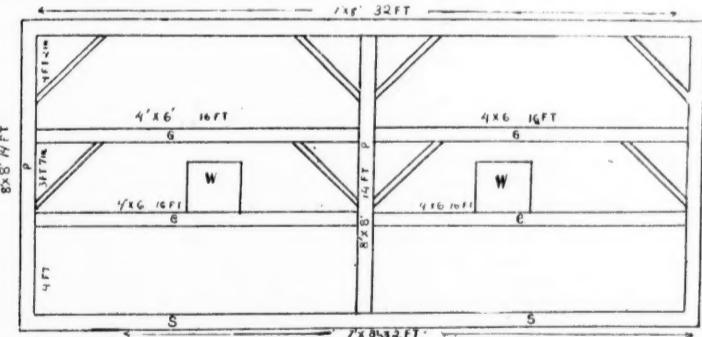


FIG. 4.—Side View of Frame.

board 10 inches wide and with the strip "E," which is 5 inches wide, forms the trough. These combined troughs and racks are the best and most convenient, as anything and everything can be fed with them. Self-feeding racks can be put in, but they are not as good as these. The dotted lines "H" in Fig. 1 are the salt troughs, which are made out of strips two or three inches wide and three or four feet long. If you want to feed cut fodder have a spout from the loft to a trough in the alley from where it can be fed easily.

The building should be painted, which will not cost a great amount, but will greatly improve its appearance and make it more durable. The following is the bill of material and cost:

2,000 ft. timber @ \$10 per M.....\$ 20.00
650 ft. 2x4 scantling @ \$8 per M..... 5.20

Dewey, E. H. Stone, and others whose names we did not learn. He paid from \$10 to \$25 each for ewe lambs and 2-year-old ewes. Mr. King is an extensive breeder of Merinos.

A correspondent at Elk, Mich., asks if some reader of The Farmer will give him a drawing and description of a sheep manger for feeding hay and grain. If any of our readers have a good one, and will send us drawing, we will have a cut of it made and publish it in The Farmer.

Indiana lost 57,929 sheep during 1896-97, and has 198,724 head less than in 1895. The number of lambs decreased 50,724 in 1896, and 80,081 since 1895. The wool clip was 387,720 lbs. less this spring than last, and 616,000 less than in 1895. The flocks of that state are very mixed in character, and but little attention is paid to breeding by the farmers generally. They prefer to grow corn and feed hogs.

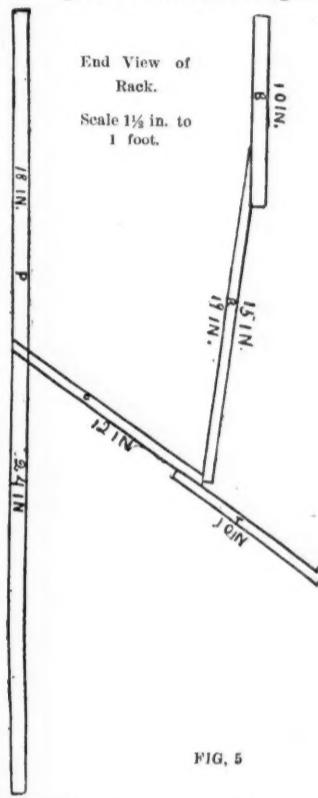


FIG. 5

Breeding sheep of all breeds and families are in active demand from foreign buyers in England. Breeders from South America were large buyers. At all the lamb fairs during September so far there was a big business in feeding lambs. At Hawick 24,300 head were sold, at the "rise" of from 1s 6d to 3s 3d per head. At Lockerbie 550 Border Leicesters, Yorkshires, black faces, and cheviots were sold. At the sale of the Lincoln Long Wool Breeders' Association 491 rams were catalogued; prices ruled high with an active demand. Buenos Ayres buyers paid from 100 to 200 guineas for their selections, among which were many prize winners. At Peterborough 12 Oxford and Hampshire Downs realized better prices than last year. At Beverley there was a good demand and steady prices.

When writing advertisers mention Mich. Farmer

Shropshires AT AUCTION.

The Concord Shropshire Sheep Breeders' Association will hold its first annual sale at

CONCORD, MICH.,

OCT. 13th, 1897.

The following stock will be offered:

200 IMPORTED, CANADIAN and AMERICAN BRED EWES,

All Bred to Reserve Rams.

Also some choice rams and ram lambs for sale. Importation will arrive about Sept. 1st. Pedigree catalogue after Oct. 1st. Will also have

5,000 GRADE SHROPSHIRE EWES.

Some choice rams and ewes at private sale now.

Address I. S. DUNHAM, Sec., Concord, Mich.

RAMS. CUT PRICES

FOR 20 DAYS to make room for importation of breeding ewes. 100 head big, robust one and two-year-old high class, pure bred SHROPSHIRE RAMS to select from. Also P. C. Boars. Write to-day for price list. A. H. FOSTER, Allegan, Mich.

Grange Department.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

Address all correspondence for this department to
KENYON L. BUTTERFIELD,
AGRICULTURAL COLLEGE, - - MICH.
News from Michigan Granges is especially solicited.

EDITORIAL INK DROPS.

We hope that our article in last issue on Grange libraries will stir up members of Granges who have got libraries to let us hear about them. We also hope that Granges that have not libraries will take an interest in the matter and start a movement for securing a permanent Grange library.

How many of our Granges are going to try the idea of a rally meeting about the first of October to discuss ways and means of an active autumn Grange campaign? Let us know the results.

We are always ready for more Grange news. Perhaps some may have noticed that we are securing some splendid reports of Pomona meetings. We not only want those but we want to get brief items from all the subordinate Granges, and we want them often too. Let correspondents arouse themselves again so that we may have two or three columns of good Grange news every issue.

Do not forget the county conventions for electing delegates to State Grange. Don't forget to elect your best Patrons. Don't forget that the value of the State Grange will depend on the kind of delegates you send, and also upon the interest and enthusiasm with which the subordinate Granges discuss important topics which they wish acted upon at State Grange.

The friends of the Agricultural College have been much gratified at the prosperous way in which the College year has opened. At this writing the number of students actually enrolled is nearly 350, or almost a hundred more than a year ago at the same time. Nearly 200 of these are new students, and about 65 of the total number are girls taking the women's course. Doubtless the price of wheat is responsible to some extent, but it does look as if the sentiment of the farmers toward the College had changed. We believe that this has been brought about by the Experiment Station bulletins; by the favorable attitude of the "Michigan Farmer;" by the work of the Granges and Farmers' Clubs in creating a right sentiment toward the College; by a system of extensive and persistent advertising since President Snyder took hold of the College, including a series of well-patronized excursions. All these have been factors and all have helped to make the farmers feel that the College really is doing a good work and that it is worthy of patronage. We hope that the tide now set in will not cease until the Michigan Agricultural College is not only the best but the largest institution of its kind in the world.

PATRONS AND TEACHERS' ASSOCIATIONS.

Possibly a number of our readers have noticed frequent reports in these columns from meetings of associations known as Patrons and Teachers' Associations. We have editorially called attention to these several times, and always in praise of them. Almost uniformly the reports of these gatherings are flattering to the wisdom of those who have organized these associations. They serve to get the teachers and educators generally into contact with those who are sending chil-

dren to school. It is hardly necessary to argue that this of itself is a good thing. The teachers will become more tolerant of the ideas of parents, who in their turn will learn something from the teachers' standpoint. Better feeling will be engendered; better methods will result; more interest in the schools will follow, and in general we are sure that better district schools will result in those communities where these associations exist.

In another column we publish a letter from Deputy Superintendent of Public Instruction, Mr. D. E. McClure, who is probably known to many of our readers as a most efficient county commissioner of schools in Oceana county, and an ardent member of the Grange. Brother McClure has probably pushed this matter of Patrons and Teachers' Associations farther than any other man in the country. The letter he writes is simply a brief letter full of practical, plain directions as to organizing these associations. We hope that leaders of the Grange in every county will take it upon themselves to agitate this question. Get into communication with the commissioner and see if you cannot this fall organize a Patrons and Teachers' Association in your county.

GRANGE NEWS.

ROCHESTER GRANGE No. 267 has commenced to wake up from its lethargy, and began its sessions with new life and vigor. Have initiated one new member and sent him to the Agricultural College. Our last session's question was, "Should novel reading by the Grange be encouraged?" which brought out many bright up-to-date thoughts. Many good books were cited to prove that good novels were grand educators, although many proved hurtful. We finished the program with our harvest feast.

MRS. J. J. SNOOK, Reporter.

MONTCALM GRANGE No. 318.

A very pleasant meeting of this Grange was held at their hall on Saturday, Sept. 18. After the opening exercises the master gave the meeting over to Ceres, who presided in a very creditable manner. The hall was beautifully decorated with grasses and grains, with a few fall flowers to give a little color. The exercises were appropriate and not too lengthy, with music interposed, closing with a supper. All felt that a very pleasant afternoon had been spent.

Montcalm County Pomona, No. 24, will meet at Greenville with Montcalm Grange, No. 318, on Oct. 7. It will be their annual meeting and election of officers will take place, also the county delegates will meet at the same time and place to elect delegates to the State Grange.

MRS. C. H. THOMPSON, Sec. **CALHOUN COUNTY GRANGE** will meet at Battle Creek Grange hall on Tuesday, Oct. 5, at 10:30 o'clock. A display of grapes is invited from all growers connected with the Grange, and a general conference on that subject. Further program as follows:

1. Reports from State fair, Mr. and Mrs. C. P. Chidester, Mr. and Mrs. S. E. Woodworth and others attending.

2. The business outlook from the farmer's standpoint, Frank Minges, G. C. Hicks, F. A. Talmage.

3. Practical experience with the State traveling libraries, Lillian Adams, L. B. Garratt, Mrs. C. C. McDermid.

4. Best methods of keeping grapes, fresh canned or preserved. Mr. and Mrs. A. W. Lee, Mrs. Abram Minges.

5. Recitation, or song. John Woodworth.

J. M. WILLISON, Master.
C. C. McDERMID, Lecturer.

The following was the program of the Grange Day exercises at the Grand Traverse county fair, Thursday, Sept. 23, 1897: Music, Boys' Band; Grange Chorus, "Help It On"; Glee, "Great Scott," by the Inland Grange Choir; address, "Lessons from the Klondike," by Attorney P. C. Gilbert; Grange Chorus, "The Dear Old Farm"; address, "The Outlook for the Farmer," Hon. J. G. Ramsdell; Grange Chorus, "The Farmer Feeds Them All"; closing song, by quartette; music, by Boys' Band. The day was a great success.

IMPORTANT NOTICE!

The books of this office show at this date the following Granges entitled to elect delegates to the County Convention to be held on Tuesday, October 5, 1897, by virtue of Section 3, Article 4, By-Laws Michigan State Grange:

Allegan.—1 Rep.—37, 53, 154, 247, 296, 390, 520.
Antrim.—1 Rep.—676, 691, 709, 716, 718, 470.
Barry.—1 Rep.—127, 145, 256, 424, 425, 472.
Benzie.—1 Rep.—503.
Berrien.—3 Reps.—14, 43, 80, 81, 122, 194, 84, 700, 332, 722, 726, 729, 123, 87.
Branch.—2 Reps.—88, 96, 97, 137, 152, 136, 195, 86.
Calhoun.—1 Rep.—65, 66, 85, 129, 200, 292.
Cass.—1 Rep.—162, 291, 695.
Charlevoix.—1 Rep.—689, 705, 706, 707, 719.
Clinton.—1 Rep.—202, 225, 358, 439, 456, 459, 702.
Eaton.—1 Rep.—67, 134, 360, 370, 625.
Emmet.—1 Rep.—724, 727, 730.
Genesee.—1 Rep.—694.
Grand Traverse.—1 Rep.—370, 469, 624, 663.
Gratiot.—1 Rep.—391, 500, 508, 553, 514.
Hillsdale.—2 Reps.—108, 182, 269, 273, 274, 286, 251, 381, 133, 107.
Huron.—1 Rep.—662, 667, 668, 680, 678.
Ingham.—1 Rep.—241, 262, 289.
Ionia.—1 Rep.—174, 175, 185, 192, 270, 272, 640.
Jackson.—1 Rep.—155, 710.
Kalkaska.—1 Rep.—697, 674, 664.
Kalamazoo.—1 Rep.—16, 49.
Kent.—2 Reps.—19, 63, 110, 113, 170, 219, 222, 337, 340, 348, 563, 723.
Lapeer.—1 Rep.—246, 549, 607.
Lenawee.—4 Reps.—212, 276, 277, 279, 280, 293, 213, 165, 214, 384, 509, 383, 660, 703, 708, 712, 713, 720, 721.
Livingston.—1 Rep.—613.
Macomb.—1 Rep.—403.
Manistee.—1 Rep.—557, 633.
Mecosta.—1 Rep.—518.
Montcalm.—1 Rep.—318, 650, 441.
Monroe.—1 Rep.—471.
Muskegon.—1 Rep.—372, 373, 555, 546.
Newaygo.—1 Rep.—495, 544, 545.
Oceana.—1 Rep.—392, 711.
Oakland.—1 Rep.—245, 257, 259, 267, 275, 443, 283.
Ottawa.—1 Rep.—30, 112, 313, 421, 458, 639, 652.
St. Clair.—1 Rep.—528.
St. Joseph.—1 Rep.—22, 178, 215, 303, 266.
Saginaw.—1 Rep.—574.
Sanilac.—1 Rep.—417, 566, 654, 714.
Tuscola.—1 Rep.—513.
Van Buren.—1 Rep.—32, 60, 158, 159, 355, 610.
Washtenaw.—1 Rep.—52, 56, 92.
Wayne.—1 Rep.—367, 368, 389, 618, 636.
Wexford.—1 Rep.—725.

For the purpose of securing representatives to all delinquent Granges, we shall add to the list all that may report up to the last moment practicable, and delegates duly elected, who, at the Convention, show a receipt for dues for the quarter ending March 31, 1897, on which is endorsed "Entitled to representation," should be allowed to participate in the work of the Convention. Ann Arbor, Mich. JENNIE BUELL, Sec.

THE NATIONAL GRANGE.

Washington, D. C., Sept. 16, 1897. The 31st session of the National Grange P. of H., will meet on Wednesday, November 10, 1897, in Harrisburg, Pa., in the Supreme Court room, at 11 a. m. Headquarters at the Lochiel House.

The sixth degree will be conferred on Wednesday evening, the 10th, and the seventh degree on Thursday evening, the 11th, in opera house.

There will be a public reception at the opera house Thursday afternoon, November 11th.

THE INSTITUTES AND THE GRANGE.

The Farmers' Institutes are doing a good work in behalf of agriculture in Illinois. The papers read, discussions had, and other timely exercises of the programs are sure to bring new ideas, practical benefits and much social pleasure to many farm neighborhoods in the State, while the wish of the Legislature in appropriating the funds and of the official board in charge of the matter, is to widen the work until an institute is regularly held in every county. However, good as they are, the institutes do not reach far enough in the scope of their work; meeting only once a year it seems necessary to pick, cull and choose out the best or most experienced farm talent for the program, leaving the boys, girls and most of the neighbors with no place or part, only as onlooking listeners, and so the institute is more the graduating exercises of the seniors rather than a school of the beginners, who most need the lessons.

To amend this, and to help its own good work, the institute should co-operate in pushing the Grange, which takes in the boys and girls of the farm, with their parents, and meets weekly or twice a month, the year round, giving every member work on the program, of farm and home and varied literary matter, and so educating a large and trained body of farmers for efficient service in the institutes, or other popular gatherings where the people exchange ideas, mold opinion and direct public affairs. For the very best results the Grange and the institute should go hand in hand, the

Grange sending the best of its workers to help spread the intellectual feast at the county institute, and the institute lending willing and hearty help to plant the permanent all the year round training school of the Grange in every township of the county. Illinois farmers are urged to immediate and practical action in this behalf.

Dunlap, Ill. THOMAS KEADY,
Sec. Illinois State Grange.

COUNTRY ROADS.—III.

Rules for making good country roads must vary as the soil varies. Clay soils must have thorough drainage. Sand, other than quicksands, does not need draining at all. The wetter it is the better for the road. The black muck of our marshes and swamps may or may not need draining. If it has a solid foundation under it, drain it thoroughly. If there is a body of water beneath it as in case of sink holes it may be better not to drain it at all, if it can not be effectually done. I have seen roads that might have been passably good, if properly treated, made impassable by cutting a ditch on either side and piling earth onto the roadbed till all went down together. In such cases the mass of living roots is the main thing that sustains the road, hence, if you are not prepared to fill up a sink hole, do not cut them off and do not put a pound of earth on the roadbed that is not absolutely necessary. As I have already said, clay must be thoroughly drained to make a good road of it. In some cases surface ditches and gutters to carry off the water will be sufficient. In others the roadbed will need tile draining. The edict of the farmers' clubs has gone forth that so far as their votes and influence go there shall be no change in our road laws. To be sure they modify it a little, but as they oppose every proposed change on the alleged ground that it will make the roads cost more, the modification amounts to nothing. As I have been a civil engineer and am a good roads man as well as a farmer, I can't see things as they do. If I had my way about it I would have our road laws changed in a number of points. One of them relates to drainage. As the law now stands it does not authorize the highway officers to turn the water from the highways onto the neighboring farms nor does it provide any way to get rid of it. I would have the officers authorized to acquire by gift, purchase, or condemnation, the right to open watercourses across neighboring lands to drain the water from the highways, and to expend highway money and labor in opening these outlets. In a majority of cases where the highway needs draining, ten dollars laid out in this way will do more toward making a good road than ten times the amount will if laid out on the road itself.

As with drainage so with plowing or breaking up. Some soils need it; others do not. Sandy roads do not need the plow. Clay roads do need it once. They must be raised in the center to carry off the surface water when it falls. This should be done at the first grading of the road and the entire roadbed should be broken up and pulverized, the object being to get a perfectly uniform and homogeneous mass of the earth forming the roadbed. Turn a back furrow down the center of the road and keep plowing it in and harrowing it and rolling it until it has the desired slope and the soil is as fine as it can be made. Do not raise it too high in the center. That is a common fault which I shall mention again. A slope of one in twenty is enough. In Chicago they used to raise the center of the street 18 inches. They have gradually flattened the slope till it is less than half that and get better results. The nearer level a roadbed can be and carry off the surface water the better it is for travel. A slight slope will carry off the water if the surface be hard and smooth. That is one great object in working the earth so fine, because then you can pack it so much smoother and harder than you can without it.

When you have the road worked thoroughly and smoothed off evenly to its proper grade, then roll it down as hard as ever you can and see to it that when done there is not a hollow left for the water to stand in. A common farm roller is better than nothing for this work, but it should be as heavily loaded as it will bear. Every town ought to have one of the heavy road rollers made on purpose to do such work. When a road is once thoroughly packed by one of these road rollers the rain will not easily soak into it

nor will the wagon wheels cut it so readily as they would otherwise.

Do not use a scoop scraper in finishing a roadbed. It is a nuisance. It leaves its loads in hard bunches with soft spots between, some of which are sure to develop into mud holes. Flat scrapers with tongues are much better. You can distribute the dirt evenly and smoothly with them. I have seen men finish off a railroad grade as smooth and true as a house floor with them.

When your roadbed is finished never put a plow into it again unless compelled to. A man who will plow up a well graded and settled roadbed ought to be prosecuted and fined to the full extent of the damage he does, including damages to persons' feelings who have to travel over the road. I have seen the mischief done a great many times to the sorrow of the public.

Kalamazoo Co. F. HODGMAN.

TEACHERS AND PATRONS' ASSOCIATIONS.

HOW TO ORGANIZE THEM.

1. Secure, if possible, the co-operation of the county school commissioner.

2. Call a meeting at some center. Arrange a good program alternating farm and school topics. Have program published in county papers and well advertised. Have music and recitations.

3. Have the meeting on Saturday, and have a round table meeting the Friday evening prior to Saturday meeting. For round table meeting have the same topic like the following: "What the Public have a right to expect of the Schools;" "The Relation of school life to after Life;" "What co-operation of Farm, Home and School may Accomplish." The Friday evening meeting should be a hummer to get a large attendance Saturday.

4. Saturday have a picnic dinner at school so the ladies can attend, and not stay at home to cook for company.

5. Patrons and teachers' children should be on the program.

6. Officers should be selected from patrons, teachers and pupils.

We had nineteen such meetings in Oceana Co.—smallest attendance 60, largest 1,000. We raised \$400 one year for graded course of reading, lecture course for country, papering schools, purchase money for organs. With such work education booms.

DAN E. MCCLURE,
Deputy Supt. Public Instruction.

ECONOMY ON THE FARM.

(Read by D. H. McMullen at Grand Traverse Pomona Grange.)

It is not economy to put crops in the ground without thoroughly preparing the soil.

It is economy to have good buildings, especially good barns and out-buildings, for the proper storage of all crops.

It is not economy to clear a lot of land and then let it lie idle to grow up to weeds and briars.

It is not economy to plant a large acreage and then not take care of it, thereby losing time, seed and labor. Better to tend a small acreage well than to half tend a large acreage.

It is economy to buy good tools; also to repair them at home.

It is economy to use brains and run the farm on a business basis.

It is economy to do little things when they should be done.

It is not economy to use tobacco or liquor, for the money so spent will often pay the assessment on a life insurance policy, or repair your buildings.

It is economy to be careful; for one of the greatest leaks on the farm is carelessness. A careless man can not expect boys or hired men to be careful.

Tools will be left lying where last used. It may seem a small matter to leave a hoe sticking where last used. But you have all noticed when you went after the hoe that it was more or less rusty and a great deal of dirt stuck to it, and would continue to stick no matter how much hoeing was done, unless forcibly removed with a stick lubricated with elbow grease.

It is the same with other tools. If you leave your cultivator or plow sticking in the ground or lying on the ground it takes some time for them to scour bright again. In the meantime they do not do good work, which is time wasted, let alone the damage to the implements.

Implements well housed will last nearly twice as long as those that are left exposed to the weather.

The motto of every farmer should be, a place for everything and see that everything is put in its place.

TRAINED TEACHERS NEEDED IN COUNTRY SCHOOLS.

(From Report of Committee of Twelve.)

Supervision is one of the vital needs of the rural schools, since most of their teachers are inexperienced. The number of normal-school graduates in rural schools is lamentably small. The reason is that the normal school graduate can obtain a better salary by teaching in a larger field. The demand for this class of teachers makes their salaries so high that the country schools cannot afford to employ them. As soon as teachers become proficient by reason of experience acquired in rural schools, the probabilities are that they will be induced to seek better positions in cities where their experience and abilities will command higher salaries.

Add to this the other fact that many young men begin to teach as a stepping stone to some other profession, and while they are teaching a country school are studying law or medicine, and their hearts are with that rather than with teaching; and also add that many young girls teach until they marry, or as long as they are compelled to teach, and no longer, that they have no real love for their work and no wish to stay in it, and we see how the problems multiply.

Rural schools suffer from lack of trained teachers. In them, as a general thing, are young graduates from the village high school, or some favorite among neighborhood families, or a type of ancient teacher whose placid life is not disturbed by the vexing problems of his profession. This raw material must be developed, made shapely, orderly, and systematic. If time is to be saved to the children, and schools properly supported. A bright and live supervisor will bring order out of confusion, harmony out of discord, and will give life and beauty to that which before was inert and ungrainy.

Teaching is a great art, based on a profound science. The supervisor is the expert who has given this art and science his careful attention, and whose business it is both to know how to teach, and to show others the way of teaching. He can in some measure compensate for the lack of skilled work in the school by closely supervising and guiding inexperienced teachers and showing them what to do. An expert is one who possesses skill gained by practice. A supervisor who claims to be an expert should have experimental knowledge of "the how to teach." He is supposed to have given careful attention to those things which characterize a good school. Not only must he know how to teach, but he must know how to instruct others in the art and science of teaching. He must be a skilled teacher of teachers. Without this directing spirit, schools must necessarily suffer until teachers happen upon some better way. It is a great misfortune for schools to wait for wisdom in teaching until the many mistakes of teachers have pointed out better methods. The presence of skilled supervision has been the salvation of many schools.

It is one province of supervision in the country school to bring teachers into contact with each other, to illustrate better ways of teaching, to break up the isolation and monotony of rural school life, and to take to the doors and homes of people and teachers alike the life and freshness which have been the result of research and study on the part of the best minds in the profession. The province of supervision in rural schools falls far short of its legitimate purposes when it begins and ends in the schoolroom.

This point is not sufficiently well appreciated by those who have the oversight and care of schools scattered over a large tract of territory. Country schools have an environment of their own which should neither be forgotten nor ignored. The best supervisory work is that which brings into the rural school everything in farm and rural life which is strong and pure and wholesome. It is possible for the supervising officer so to exert his influence as to give grace and dignity to each individual school, and make it the rallying point for every good influence, a blessing to the entire community in which it is situated.

Attention is here called to the fact that in general but little care is taken in the selection of officers chosen to look after the interests of the rural schools. In the majority of states the county superintendents are elected by the people of the county without any

regard to the preparation or qualifications they may have for the work. Very few states require the superintendents to have any special qualifications, and in many instances supervisors are put in charge of teachers who know more about teaching than they do, and are required to hold examinations that they themselves could not pass. Add to this the fact that the superintendents are generally paid very small salaries (average \$828 for the whole country) or a meager per diem, and that many engage in other business and regard supervision of schools as an incidental matter, and it becomes apparent that professional supervision is too often the exception rather than the rule.

BEFORE AND AFTER THE GRANGE.

Before we had the Grange in our community we, as neighbors, knew each other only by sight, but after we got into the Grange we became well acquainted with each other—so much so that we were willing to trust each other, and love each other as neighbors. Before we had the Grange it was a difficult matter to have a school, but after the Grange came we had no trouble in running a school. All the preachers said that it was much easier to preach to a community where there was a good Grange than where there were none. They had better audiences, better attention, and more sociability, community more united, less bickering and back-biting, better school and church houses, more refinement. The neat, white shirt, well fitting clothes, nicely polished shoes took the place of the loud shirt, striped pants crammed into the high-heeled boots, rattling spurs, wide brimmed hats, and the large red kerchief tied around the neck. The postmasters claim that with the advent of the Grange the labors of their offices increased from 500 to 5,000 per cent, that where only a few families took a paper, or sometimes two, before the coming of the Grange, after it was introduced every family subscribed for and read from one to ten papers. It was a noticeable fact, before the Grange, that there was not a man in the community who could preside over a debating society or kangaroo court with any degree of correctness. After the Grange there was not a member that could not preside over any deliberative body with promptness and dispatch and according to parliamentary principles. Before the Grange our young men and women knew virtually nothing of business, but after they became members of the Grange any of them could deliver an oration, recitation, speech, write and read an essay on any given subject, act on any committee, make out and read reports, and in general handle any subject that was allotted to them. We have to-day thousands of men and women in our land who have attained prominence in business and literary circles through the medium of the Grange. Some of our greatest thinkers and writers took their start in the Grange. Some of our leading politicians of to-day owe their present prominence to the Grange.

The above statements are all facts. Then why not the Grange? Why has not every community a working Grange where all may be educated in the business affairs of life and the realities of our existence? Why is it that every parent in the land is not interested in getting up and perpetuating the Grange, that they themselves may become better fathers and mothers, better citizens, and that their children may be better prepared to wrestle with the responsibilities of life?

Why not the Grange?—In Texas Farmer.

In many instances the loss to farmers and stockmen from a failure of the water supply about this time of the year is more than sufficient to drill a well to the proper depth to secure an unfailing supply of water. While you may have to dig deeper, yet now is the best time to dig, as the water is at its lowest point, and a stream struck now means an unfailing supply forever. We advise our readers to write to Star Well Drilling Company.

W.H.O. DRILLING MACHINE CO., AKRON, Ohio.

When writing to advertisers please mention Michigan Farmer.

MRS. PETERSON'S STORY.

I have suffered with womb trouble over fifteen years. I had inflammation, enlargement and displacement of the womb.

The doctor wanted me to take treatments, but I had just begun taking Mrs. Pinkham's Compound, and my husband said I had better wait and see how much good that would do me.

I was so sick when I began with her medicine, I could hardly be on my feet. I had the backache constantly, also headache, and was so dizzy. I had heart trouble, it seemed as though my heart was in my throat at times choking me. I could not walk around and I could not lie down, for then my heart would beat so fast I would feel as though I was smothering. I had to sit up in bed nights in order to breathe. I was so weak I could not do anything.

I have now taken several bottles of Lydia E. Pinkham's Vegetable Compound, and used three packages of Sanative Wash, and can say I am perfectly cured. I do not think I could have lived long if Mrs. Pinkham's medicine had not helped me.—

MRS. JOSEPH PETERSON, 513 East St., Warren, Pa.

THOMPSON'S BANNER..

ROOT HAND and POWER CUTTER

Farms all roots and vegetables into FINE STOCK FOOD. Indispensable to dairymen and sheep breeders and of greatest value to general farmers and poultrymen. Cuts fine; no choking. Self Feed Shaking Crate takes out all dirt; saves the knives; fully warranted. **Send for Free Catalogue.**

J. E. THOMPSON & SONS, 25 River St., YPSILANTI, Mich.

Home-Mixed Fertilizers

A man can save hundreds of dollars by mixing his own fertilizers. He saves about half the first cost; he can use the materials best adapted to the particular crop, and consequently secure the best results possible for the money spent. Nitrate of Soda should be used to furnish the nitrogen (ammonia). It is not only the cheapest, but the most soluble, available, and in every way the best form of nitrogen.

Free A 40-page book, "Food for Plants," tells all about mixing and using fertilizers. Please ask for it.

S. M. HARRIS, MORETON FARM (P. O.) N. Y.

STUDY BOOKKEEPING & SHORT-HAND AT HOME.

and prepare for a good position. We also teach Penmanship, Commercial Arithmetic, Business Forms, Commercial Law, Letter Writing, Spelling, etc. in a thorough, practical manner, at a small cost. Over 1,000 enrolled last year. National reputation. 24-page catalog free. NATIONAL CORRESPONDENCE BUSINESS COLLEGE, Fenton, Mich.

The Best EDUCATION

prepares young men and women to maintain themselves in honorable and profitable independence, the secret of success in the Business, Shorthand, English, Penmanship or Mechanical Drawing Department of the DETROIT BUSINESS UNIVERSITY, 11-19 Wilcox St., Detroit. Call or send for catalogue.

PROFIT IN THIS Magic Lantern and Stereopticon Exhibitions pay well. Small capital needed. 250-page catalog, descriptions and lowest prices of everything necessary. FREE, McALLISTER, Mfg. Optician, 49 Nassau St., N. Y.

BOYS AN ELEGANT WATCH FREE

If you would like one send your name and address on postal card to Modes Pub. Co., 128 White St., N. Y.

BRASS BAND Instruments, Drums, Uniforms, Equipment for Bands and Drum Corps. Lowest prices ever quoted. Fine Catalog, 400 illustrations, mailed free; it gives Band Music & Instructions for your Bands. **1500 MUSICIANS**, 50 Adams St., Chicago, Ill.



Miscellaneous.

TIME OF THE GOLDENROD.

Whispering winds kiss the hills of September,
Thistledown phantoms drift over the lawn;
Red glows the ivy, like a ghost-lighted ember,
Shrouded in mists breaks the slow-com ing dawn;
Sunlighted vistas the woodland discloses,
Sleeping in shadow the still lake reposes,
Gone is the summer, its sweets and its roses—
Harvest is past and summer is gone.
Plaintively sighing, the brown leaves are falling,
Sadly the wood dove mourns all the day long,
In the dim starlight the katydids, calling,
Hush into slumber the brook and its song.
Gone are the sowers and ended their weeping,
Gone are the gleaners and ended their reaping,
Blossoms and bees with the song-bird are sleeping—
Harvest is past and summer is gone.
—Robert J. Burdette.

AFTER LOVING THIRTY YEARS.

When pretty Hester Warren married Ezra Banks, who was 20 years older than she, and a shy, silent man out of touch with village life, everybody said that she made a mistake that she would soon regret. Yet, though village eyes kept keenest watch upon them, village prophecy was for once at fault. Hester's girlish beauty changed into comfortable middle-aged comeliness, and Ezra grew stiff and rheumatic, yet their devotion to each other was unchanged; indeed, after Nannie, their only child, married and left home, it seemed as if the pages of life had blown back for them and they were once more lovers and the world was for them alone.

That was before Ezra had typhoid fever. Through his long illness his wife nursed him tenderly, but he came from it a broken-down old man, with his ears forever sealed to all the common sounds to which his life had been set. He was slow in realizing this, but one day as he lay watching his wife and the doctor, the knowledge broke harshly upon him. He could see his wife's lips move as she smoothed the bed with her soft, wrinkled hand, but he could hear no word. Then he turned his dull eyes, with a pitiful look of pain darkening them, toward the doctor. He, too, was speaking, but the deaf ears could catch no sound. His weak, peevish voice jarred suddenly upon their talk:

"Why don't ye speak so's I can hear ye, std 'o mumbling so?"

His wife started and then cast a quick, imploring glance at the doctor. She leaned down over the bed; her face was in the shadow and her husband could not see her eyes.

"Do you hear me now, dear?" The words reached him faintly, and from a distance. He struggled with the sounds a minute or two before they resolved themselves into words.

"Of course I hear ye," he said fretfully, "only why don't you speak up? I ain't so sick, be I?"

The words were a little clearer now, though still far off. "You have been very sick, but are getting better fast. It has to be quiet for you, you know, dear, but you will soon be up, now."

The old man shut his eyes wearily; the effort had been a heavy one for him. His wife turned to the doctor, her eyes shining through her tears. "I can make him hear," she cried, "I knew I could! I didn't believe Ezra could get where he couldn't hear me. And he needn't ever know now."

The doctor was looking at her and said nothing. He was a young man and it seemed very pitiful to him.

But he had not understood the old man's strong constitution. In a few weeks he was about again, as well as ever, apparently, save for the sealed ears. His wife chattered to him in her old fashion and kept out of sight the medicines she took for her strained voice; she cautioned the neighbors who came to see him, and thought that he did not know. But she was mistaken; there were other sounds—many of them—that had been woven into a life of nearly 70 years, and in place of these there was a great vacant stillness; and he knew all.

One afternoon she found him sitting in the big wooden chair in the kitchen, studying his old twisted hands. He gave a tremulous smile as she came in.

"I'm most broken up, Hester," he said.

"Don't!" she cried, "don't, Ezra!—I

can't bear it! We're both getting older but that's all 'tis."

He shook his head sadly. "No 'tain't, Hester—I've been a seeing it for a long time. You are young yet—you can see and hear just as you used to, but I—I'm an old man, Hester. You've been a good girl, and we've had a happy life together, but I didn't calculate for you to be tied to an old man. I've got to thinking about it lately, and sometimes I think folks was right and it hadn't order been."

The woman listened and a great pain seemed to beat up in her throat and choke her voice. She leaned over and put her trembling hands on his.

"Ezra," she cried, and the appeal in her voice carried it with clear distinctness to him, "Ezra, have I ever said or done a thing to make you feel so?"

He looked up, startled. "God knows you haven't, Hester," he said earnestly.

"And Ezra, if anything should happen to me—if I should be sick or helpless, would you love me less? Would you?"

A change came over the old man; it seemed for an instant that the face of his youth looked back at her. "If it wasn't for your suffering, Hester, I wish you could see," he said, almost passionately.

He rose stiffly and stood with his arm about her, looking down the road. It was toward nightfall, and the valley was full of shadows, while above the hills floated soft gray clouds—the dead sunset. And even as they looked a sudden thrill and flush came across these, and the valley was filled with the glory of the afterglow, and the two old figures stood silent in the midst of the golden light.

It was a few weeks after this that Hester caught a severe cold. She was in bed for several days, and Nannie had her husband and child to care for and her mother would not let her stay long. "They'll be needing you—I can get along now," she said.

"I guess they can get along without me a little while longer," answered Nannie.

"What say?"

Nannie looked alarmed; she raised her voice and spoke with careful emphasis, "I guess—they can get along—without me a little while," she repeated.

Her mother nodded. "I said it had been quite a while," she said, "I'm glad you're going, Nannie, though we shall miss you so."

Nannie's face filled with a pitiful tenderness. Her mother looked up suddenly and noticed a strange expression come into her eyes; she spoke with curious eagerness.

"Nannie," she said, "tell me true—don't I hear as I used to?"

Nannie's face flushed; with a sudden impulsive gesture she threw her arms about her mother, sobbing bitterly. But in her mother's eyes the strange expression grew into a glad light.

"Don't feel so, Nannie," she said. "I—I guess I'm almost glad. I'm going to tell your father."

Nannie went home the next day sorely against her will. She told her husband that it almost broke her heart to think of them so; if it wasn't for little Nannie she would go back there and stay, but she couldn't take the child—it might hurt her throat seriously to have to shout to them. Then she caught Nannie up and kissed her again and again; she wondered how she could live if she couldn't hear that baby voice. She was troubled, too, for the child had a delicate throat and she dared not take her often to see the old folks—and they would miss her so!

But it was not so hard; her mother spoke of it herself and said that she and father had talked it over and they knew it would be best not to have the child there often. And Nannie mustn't worry—they could get along all right as long as they could hear each other.

Indeed it seemed as if the bond of suffering drew them closer together. It was beautiful to see the old man's care for his wife and his tenderness in speaking to her. The neighbors who had pitied at first talked often of it; they said they never saw two deaf people take such comfort in each other. Often on summer days the two high-pitched voices would be heard, and the people passing would smile at each other and sometimes linger a little. "Tis kind o' social to hear them," they said.

So the winter passed and the summer and then quite suddenly, one night, when the earth was lying hushed and silent under a soft fall of snow the old man passed from the silence of his life into the greater silence that is beyond the reach of human voice.

The neighbors for miles around came

to the funeral, and the house was full of grave, decorous whispers, broken strangely when any one spoke to the wife. She was pale and silent; only once did she speak of anything that she wanted done, and then she called Nannie hesitatingly. "Tell him I don't want him to speak so's I can hear. It—it wouldn't seem proper, somehow. It won't make any difference to Ezra now, and I—" she faltered a moment, and a tender light came into the faded blue eyes—"I guess he can't say anything about my husband that I don't know a hundred times better than him."

"I'll tell him, mother," said Nannie, gently.

Her mother spoke slowly, choosing her words. "And tell him," she said, "that we've lived together 30 years, and it don't seem more than 30 weeks as I look back. And tell him that in it all was never an angry word, never anything but a love I can't speak of; and tell him," she was crying a little now, but her face was still touched with the wonderful light, "tell him that the only thing I'm sorry for now is that there wasn't more I could do to show my love for my husband."

"I will tell him all," said Nannie.

That was a strange funeral—the neighbors spoke of it afterwards. The still figure that sat dead to the words of tender healing spoken by the minister seemed to lend an element of mystery to the scene, and the contrast between the darkened room and the brilliant, sparkling world outside flashed upon their eyes like a miracle.

They spoke of it on the way home and said that Ezra had been a good husband to her, and no one would fill his place. "Nannie means all right," Mrs. Tarbox said, smoothing her black dress, "but she hasn't time to set down and make a work of entertaining her mother."

"Tis so," answered Mrs. Slocum, "and Hester'll miss entertaining Ezra, too. Taint as though she wasn't afflicted, either way. She's young and spry enough yet, but it seems most as if it's no use."

"I shall sort o' miss hearing them, summer evenings," said her friend. "We was so near, you know—it seemed almost like company."

"I guess we'll all feel bad to see the house shut up," responded Mrs. Slocum, her voice full of the solemnity of the occasion.

And Mrs. Banks, all unconscious of the talk, was being driven over to Nannie's. She was so quiet that her daughter did not disturb her. "I don't feel as if I knew what to say to her, though she is my mother?" she whispered to her husband.

They helped her tenderly into the house and Nannie put her into the easiest chair. From the next room a baby voice broke in upon them.

"Manima, can I see dran'ma! Nannie wants to see dran'ma!"

Nannie was hurrying to the door when a voice stopped her. "Let me have Nannie, please—it's so long since I have!"

Nannie stopped at the door, a great wonder in her eyes. "Why, mother!" she exclaimed.

Her mother looked up at her with a little tremulous smile.

"Yes, I know. I meant to tell you before, but I couldn't, somehow. I've heard all the time, I was only deaf a day or two from cold. I thought I really was at first, and then I kept it up, because it comforted him—somehow. He'd felt he was old and breaking down, you know, but when I did, too, he felt better and cheered right up. There was only one thing—I did want the baby so! And it seemed as if it 'twould break my heart when she did come not to answer her, and to have her strain her little voice to make me hear!"

"And you kept it up all these months!" said Nannie in hushed tone.

Her mother looked up; she was holding little Nannie with eager, trembling hands, and it almost seemed as if the golden baby head reflected a wonderful light upon her tired face.

"I guess when you've loved a man more than thirty years, that isn't much to do," she said.—Springfield Republic.

worth of the thing, but for the honor, that I offer it to you. The cross itself is worth no more than five rubles."

The soldier clinched matters by answering:

"Well, then, I'll have the cross of St. George and ninety-five rubles."—Philadelphia Ledger.

When writing advertisers mention Mich. Farmer.

THE OLD WAY

Of Treating Dyspepsia and Indigestion by Dieting a Barbaresque and Useless One.

We say the old way, but really it is a very common one at present time and many dyspeptics and physicians as well consider the first step to take in attempting to cure indigestion is to diet, either by selecting certain foods and rejecting others or to greatly diminish the quantity usually taken, in other words the starvation plan is by many supposed to be the first essential.

The almost certain failure of the starvation cure for dyspepsia has been proven time and again, but still the moment Dyspepsia makes its appearance a course of dieting is at once advised.

All this is radically wrong. It is foolish and unscientific to recommend dieting or starvation to a man suffering from Dyspepsia, because Indigestion itself starves every organ and every nerve and every fibre in the body.

The Dyspeptic wants abundant nutrition, which means plenty of good, wholesome, well-cooked food and something to assist the weak stomach to digest it. This is exactly the purpose for which Stuart's Dyspepsia Tablets are adapted and this is the method by which they cure the worst cases of Dyspepsia, in other words the patient eats plenty of wholesome food and Stuart's Dyspepsia Tablets digest it for him. In this way the system is nourished and the overworked stomach rested, because the tablets will digest the food whether the stomach works or not. One of these tablets will digest 3,000 grains of meat or eggs.

Your druggist will tell you that Stuart's Dyspepsia Tablets is the purest and safest remedy sold for stomach troubles and every trial makes one more friend for this excellent preparation. Sold at 50 cents for full sized package at all drug stores.

A little book on stomach diseases mailed free by addressing Stuart Co., Marshall, Mich.

"WHAT ARE WE COMING TO?"

ENTERPRISE
Meat Chopper

makes sausage, scrapple and hogs-head cheese quickly and thriftily—saves you as much in one busy week as it costs. Chops meats, vegetables, fish. Steadily perfected for 15 years.

For sale by all dealers. Small family size, No. 5, \$2. Chops one pound a minute. Large family size, No. 10, \$3. Chops two pounds a minute. Send 1c. in stamps for the "Enterprise Housekeeper"—200 recipes.

THE ENTERPRISE MFG. CO. OF PA., Phila.

If it's a Howard

That settles it. No better Guitars or Mandolins can be made at any price. They are simply perfect. The prices? Very moderate—you'll be surprised. Ask your dealer. If he hasn't them send for 128 p. cat. of all known musical instruments free.

THE RUDOLPH WURLITZER CO.,
107 East 4th St., CINCINNATI, O.

CIVIL ENGINEERING

Surveying and Mapping; Mining; Prospecting; Architecture; Mechanical and Architectural Drawing; Electricity; Metal Pattern Cutting; Railroad; Municipal; Mechanics; Plumbing; Engineering; Branches; Bookkeeping; Shorthand; Marine, Stationary and Locomotive Engineering; All who study **GUARANTEED SUCCESS**. Fees Moderate, Advance or Installments. Circular Free; State subject you wish to study. International Correspondence Schools, Box 366 Scranton, Pa.

The Dairy.

We have a complete Dairy and Farm Creamery in constant operation on the Experiment Farm at Climax, Mich. This is personally conducted by J. H. Brown. All dairy correspondence should be sent to Climax, Mich.

For the Michigan Farmer.

CALF STALLS AND CALVES.

On this farm, we have discovered that a very important feature in raising calves is to have some well arranged calf stall suitable for the purpose.

As a general thing, the average farmer makes little or no provision for the calves, but stands them about in convenient (?) places such as cow stalls, vacant corners, etc. We have discovered from practical experience that such a method has a considerable questionable satisfaction.

We have used small stalls, especially made for calves, for several years, and find them to be very desirable, especially if a number of young animals are to be reared.

Calf stalls do not need to be elaborate affairs to be successful, neither does one need to employ a professional to make them. A hammer, saw, a few nails, some suitable material, together with a moderate amount of ingenuity on the part of the owner, is really all that is necessary. To be sure, if the farmer is a good workman and uses dressed lumber and tries to do a tasty job, so much the better, as work well done always appeals to the critical eye.

Our stalls vary in width from two feet to thirty inches, and each stall is separated with a partition three feet in length and about three and a half feet in height. The front is also sided up to a height equal to the partitions. Each stall is supplied with a little manger, for hay and grain, which is about a foot up with a bottom sufficiently wide to hold a pail, the back side slanting inward to make more room at the top.

After placing everything in position, we covered the bottom with a combination of sand and cement, applying directly to the clay ground. This makes a most excellent floor as it will practically never rot out, is very easy to keep clean, and is not at all bad for calves to stand on. The writer might add that we shaped a little trench in the clay just back of the calves with sufficient slant to drain into a neighboring cistern; the cement was shaped to the trench, leaving it prominent in the floor.

Our mode of fastening calves is the same as with our cattle; that is, with the bar and chain. Unlike our cattle chains, the calf chains are all home-made. Several years ago we took up an old chain pump, and having quite a quantity of this well-chain on hand, we made a portion of it over into calf chains. As the chain was made of a soft, flexible metal, the links were not difficult to part and shape into the desired lengths.

Instead of using the two crotch chains with the bar and rings, a snap was used on one which fastens into the links of the other, making in all a very simple as well as a durable affair. The well-chain is, of course, altogether too frail to answer for cattle, but does very well for calves until they are nearly yearlings. The chain-bars we made, also, having a forge with which such simple work can be done.

CALF CULTURE.

A great many different ideas exist among farmers in regard to raising calves; we have tried several of them, but do not think that we have ever had better success than during the past year. Our calves are kept confined in the stalls, described above, during the night, but are given exercise in the barnyard during a portion of the day.

As a part of their feed, we give about one part oil meal to five or six parts ground oats and corn thoroughly scalded. About a teacupful is given to each calf in its milk twice a day.

As soon as they are through with their milk, they are given from one to three double handfuls of dry ground feed, according to the size of the calf. This aids very much in keeping down the desire to suck one another's ears, etc., as is usual with a calf as soon as it has disposed of its milk. Directly after, a little hay is given, clover preferred.

We have had some experience in

pasturing young calves, both by tying and giving liberty in a small lot, but our young stock have never done so well as when they have been kept up and fed as we have just described above.

KAFFIR CORN.

Two or three years ago, much was said in favor of Kaffir corn as a forage crop for cattle, especially during the fall when pasture is poor. While it is obvious that many have been successful with this crop, the writer's experience was anything but a success.

A year ago we put in a small patch of perhaps a third of an acre, especially to cut and feed in the fall when pasture began to dry up. The corn was rowed about three feet apart with the hills put in every sixteen or twenty inches.

Before we had any need for the crop the corn ripened, so it was shocked as any other. A corn-cutter, who had been engaged to aid in filling silo, was given the job of cutting and shocking it. It took him nearly five hours of good hard labor to do the job and he pronounced it the hardest corn that he had ever cut without a single exception.

Any one who will examine the stalks of the Kaffir, will readily see that it does not give promise of being the easiest corn in the world to handle. As a cattle feed, we had no success with it at all. In the first place, it was difficult to get the cattle to eat any more than the tops, and later they seemed to tire of these even. Out of twenty shocks which we cut from this little patch, we succeeded in getting rid of about eight or ten. The rest blew down during the winter and this spring was plowed under.

The success of a neighbor was quite striking from our experience. He reports that the cows ate it greedily in preference to other kinds. Whether it was on account of the soil, care, or something else, the writer does not know. We were not at all pleased with our experience with it.

Shawassee Co., Mich. C. P. REYNOLDS.

(We agree with you that it does pay to let calves run out into the fields during the first summer of their lives, as is the general practice. It is a common thing to see young calves in the pasture during the hot season, both day and night, constantly fighting flies or something worse.

Our young Guernsey bull is still turned out nights into a small meadow near the barn. He gets some exercise and plenty of fresh clover, but is kept in his box stall during the day. This practice has been followed since last May.

Another heifer calf, not considered valuable, was turned out at the same time, and the writer's father insisted on leaving it out. It was fed the same as the young bull, during the early summer, but does not now look nearly so well from enduring the out-door heat and flies.

When frosty nights come on we shall turn out during the days that are pleasant, but keep all calves in the barn at night. It does not pay to ill treat calves in any way. It would pay better to give the young things away, rather than endeavor to "toughen them up," as some express it.

Kaffir corn was tried in this section last season and found wanting in good qualities. Why "fuss" with such stuff when Stowell's Evergreen sweet corn will fill the bill completely for a summer and fall forage crop for dairy cattle?—Ed.)

MAKING BUTTER ON THE FARM.

In looking over the dairy page of the issue of Sept. 4 I noticed an article from Mrs. M. A. C. that reminds me of the way we used to make butter when we kept five or six cows.

I had been "reading up" on how to make butter. We had been keeping our milk in open pans in the pantry. We read about the deep setting system, the barrel churn, the butter coming in the granular form, and a good many other things that John Gould knows how to write so well about, when we came to the conclusion that we would try some of the new ways of making butter.

My house stands on a rise of ground about four feet higher than the barnyard, and I conceived the idea that I could "kill two birds with one stone," and that was to make a tank for the milk and let the water run from that direct to the watering trough.

I procured a kerosene barrel, cut it in two in the middle and connected them by a spout. We had a large amount of stock to water, and the milk tank was so arranged that every time we pumped water for the stock, a complete change of water was had in the milk tank.

Our well water is 48 degrees, and we could have milk stand 36 hours in the warmest weather without souring.

We got deep setting cans and put three cans in each tank, using one for a cream can. This kept the cream about the right temperature, and it was ripened about right when we were ready to churn.

I also got a 15-gallon barrel churn. We read the directions on the churn and followed them. I had done the "studying up" on making the butter, and I intended to do it all myself. I said no woman need apply.

I tempered the cream to 65 degrees and put it in the churn. I watched the glass in the churn lid, and when it became clear I took off the lid and the most beautiful sight presented itself. A perfect mass of golden grains of butter.

We salted in the churn and packed in jars after standing in the churn a while. I had such good luck this time that I thought I would try it again.

Everything went off nicely until I removed the lid, put it back again, and forgot to fasten it down. One revolution of the churn emptied the contents all out under an apple-tree.

This somewhat took the conceit out of me, and I said: "I won't be caught that way again," but I was, and then I turned the management over to my wife.

So many farmers think that expensive apparatus is required to make butter by any improved method.

But an outlay of \$5 will get the necessary apparatus to make good butter, and then it is so much less work to take care of the cans than it is so many shallow-setting pans.

The butter is better, the buttermilk is good to drink, and the skimmed milk is always sweet for the pigs and calves, by this deep-setting plan.

Now I have only one fault to find with Mrs. M. A. C., and that is, that one who can make such good butter, and tell so well how to make it, should sign her full name so we may know who she is.

I first thought it meant Michigan Agricultural College, but when I saw "Mrs." in front I came to the conclusion that it was not. Always sign your name to such good articles as that, and write often, for you are doing good.

I often hear men say that this or that is a foolish thing to write about, when hundreds of just as intelligent people never heard of such a thing, and it will do them good.

I have "run against" scores of just such instances. Many things seem so simple to me, and to find intelligent farmers that never heard tell of them or saw them, seems very queer. But the same thing applies to me, and no doubt many think I am stupid. You know that it takes everybody to know everything that is known, and nobody knows it all.

Right here is where the benefit comes in in talking to each other through The Michigan Farmer.

We must remember that when we talk through The Farmer we speak to nearly 100,000 people, and our chance for doing good is great. Some of the most simple things that we have known all our lives will be new to some one of these one hundred thousand readers, and many of them will be benefited by it.

I. N. COWDREY.

Gratiot Co., Mich.

(Many farmers, who own windmills, can easily arrange for conducting the fresh cold water direct from the well through the kitchen or porch, and on to the tank at the barns at very little extra expense. Such an arrangement as friend Cowdrey's would cost but little more than the time and labor employed.

Another advantage is in having fresh cold water constantly in the house, thus saving many steps. Of course there will be days when the wind does not blow, but these days are but few, counting the whole year round.

We, too, like to read articles from correspondents who sign their full names. And we also think it important that the location of the writer be given. As the postoffice address is not generally admissible—for reasons frequently given in these columns—we invariably attach the county and state in connection with the writer's name

or initials. The county location is most essential, as we often wish to compare surrounding conditions with our own.—Ed.)

• When writing advertisers mention Michigan Farmer.

Have You Asthma or Hay-Fever?

Medical Science at last reports a positive cure for Asthma and Hay-fever in the wonderful Kola Plant, a new botanical discovery found on the Congo River, West Africa. Its cures are really marvelous. Rev. J. L. Combs, of Martinsburg, West Va., writes that it cured him of Asthma of thirty years' standing, and Hon. L. G. Clute, of Greeley, Iowa, testifies that for three years he had to sleep propped up in a chair in Hay-fever season, being unable to lie down night or day. The Kola-plant cured him at once. Mr. Alfred C. Lewis, editor of the *Farmer's Magazine*, was also cured when he could not lie down for fear of choking, being always worse in Hay-fever season. Others of our readers give similar testimony, proving it truly a wonderful remedy. If you suffer from Asthma or Hay-fever we advise you to send your address to the Kola Importing Co., 1164 Broadway, New York, who to prove its power will send a Large Case by mail free to every reader of THE MICHIGAN FARMER who needs it. All they ask in return is that when cured yourself you will tell your neighbors about it. It costs you nothing and you should surely try it.

FREE BOOK—“GOOD BUTTER and HOW to MAKE IT.”
Cream Separators, Creameries. Write.
KNEELAND CRYSTAL CREAMERY CO., Lansing, Mich.

Improved U. S. Separators
For the Dairy and Creamery.
To run by Hand, by Belt, or by Steam Turbine. Sizes to suit all.
We have everything for Dairy and Creamery Circulars Free.
Vermont Farm Machine Co., Bellows Falls, Vermont.

Elgin System of Creameries.

It will pay you to investigate our plans, and visit our factories. If you are contemplating building a Creamery or Cheese Factory. All supplies furnished at Lowest Prices. Correspondence solicited.

TRUE DAIRY SUPPLY CO.,
SYRACUSE, New York, 303 to 309 Lock St.
Contractors and Builders of Butter and Cheese Factories. Manufacturers and Dealers in Supplies. Or write
R. E. STURGIS,
tue Gen. Manager of Western Office, Allegan, Mich.

“AMERICAN” Cream Separator

Price \$65

Unequalled for the Average Dairy. Larger Sizes if desired. Send for descriptive Catalogue.

American Sep. Co., Bainbridge, N. Y.

A TIME SAVER.

Time is of great value on a dairy farm. A SAFETY HAND SEPARATOR costs less than the tinware necessary to run a dairy of thirty cows. In the aggregate its use will save hundreds of hours now used in washing cans and pans, and in doing the hand skimming. It will increase your output both in quality and quantity, earning its first cost in less than a year. Send for circulars.

P. M. SHARPLES,
West Chester Pa., Elgin, Ill., Omaha, Neb.

For a knife that will cut a horn without crushing, because it cuts from four sides at once get
THE KEYSTONE DEHORNER
It is humane, rapid and durable. Fully warranted. HIGHEST AWARD AT WORLD'S FAIR. Descriptive circulars FREE.
A. C. BROSIUS, Cochranville, Pa.

CUT AND SHRED
your feed with the combined WOLFRING CUTTER & SHREDDER. New features. Big improvement. Guaranteed better than the old style. Price \$2.50 and up. Largest cuts in 5 minutes. Swivel Carrier any length. MARVIN SMITH CO. B66 So. Clinton St. CHICAGO, ILL.

FITS A Great Remedy Discovered. Send for a FREE package & let it speak for itself. Postage 5c. DR. S. PERKEY, Chicago, Ills.

THE MICHIGAN FARMER

AND
State Journal of Agriculture.THE LAWRENCE PUBLISHING CO.,
EDITORS AND PROPRIETORS.M. J. LAWRENCE, - - - President.
M. W. LAWRENCE, - - - Vice Pres.
M. L. LAWRENCE, - - - Secretary.ROBERT GIBBONS, - - - Associate
J. H. BROWN, - - - Editors.Nos. 39 to 45 Congress St. West,
DETROIT, MICH.TERMS OF SUBSCRIPTION:
ONE YEAR, Postage paid.....\$1.00
SIX MONTHS, ".....60

N. B.—We will always stop sending paper when the time for which it is paid has expired, so that, to avoid missing any numbers, all should renew promptly.

Always send money by draft, postoffice money order, registered letter, or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts, checks and postoffice orders payable to the Lawrence Publishing Co.

ADVERTISING RATES:

Regular Ads. per line, each insertion.....25c.
Business notices, solid minion, charged counter.....55c.
Regular Reading Notices, set in reading matter.....65c.

type, charged count.....65c.

Spec. insertion, 25 per cent extra.

No. ads. inserted for less than 75c per insertion.

Cuts and double column Ads. inserted at regular rates for space occupied.

Ads. displayed or leaded to suit advertisers, but are charged per line solid Agate measurement, or \$3.50 per inch each insertion.

No Lottery, Quack Doctor, or Swindling Advertisements inserted at any price.

SCALE OF DISCOUNTS:

The following discounts will be made on orders sent at one time for one advertiser, amounting to \$20 or over, to be completed within one year:

On \$ 20 and under \$ 50.....5 per cent.
" 50 " " 100.....10 " "
" 100 " " 200.....15 " "
" 200 " " 300.....20 " "
" 300 and over.....25 " "

No deviation from above rates.

DETROIT, SATURDAY, OCT. 2, 1897.

This paper is entered at the Detroit Postoffice as second class matter.

The apportionment of State taxes for the year 1897 shows that the total amount to be spread on the December rolls will be \$3,379,907.23. This is \$312,846.11 more than was levied in 1896. It still requires about \$1,000,000 more to run the city of Detroit than the whole State of Michigan, besides which this city has to pay more than two-thirds of Wayne county's State tax of \$441,481.30. Detroit is becoming quite a metropolis, taking her indebtedness and rate of taxation as evidence.

Gold in Washington, gold in Arkansas, gold in British Columbia, gold in the southwest, gold everywhere. Are we to be swamped with the precious metal, and is it to decline in value as did silver under greatly increased production? We don't take much stock, however, in these gold stories, and believe more can be dug out of a good Michigan farm than from three-quarters of the "claims" in any of the new gold territories. There will be more money made in sheep than in digging for gold for the next five years.

"Old Genesee," as he was best known to readers of The Farmer, Hon. Enos Goodrich, of Fostoria, died recently at the advanced age of 85 years. He had been a resident of Michigan since 1835, a member of both branches of the State Legislature, and postmaster at Goodrich. During all his life he was a man of great activity and enterprise, with strong likes and dislikes, intolerant of what he believed to be wrong and an earnest and convincing advocate of what he believed to be right. He always took a warm interest in the development of the agricultural resources of the State, especially its live stock, and was an advocate of sheep husbandry as one of Michigan's greatest agricultural opportunities, which opinion he held till the day of his death. Old readers of The Farmer will remember his contributions to its columns, which were always logical, clear and interesting. The death of Mr. Goodrich takes away one of the few remaining pioneers who were citizens when Michigan became a State, and laid broad and deep the foundations of her present development and prosperity. His memory should long be kept green by her citizens.

AMERICAN TIN PLATE FROM A BRITISH STANDPOINT.

The Secretary of the British Embassy at Washington, Mr. Hugh J. O'Beirne, has made a special report to the British foreign office on the American tin plate industry, and it has been issued from that office as an official document. It is interesting to note what Mr. O'Beirne says of the inception and growth of the industry, and what its future promises to be. He says the tin plate industry in the United States dates practically from the passage of the McKinley tariff act, at which time the American market was wholly supplied by South Wales, and he traces the gradual expansion of the industry in this country and the use of the domestic article in place of that formerly imported from Wales. Summing up the situation for the last calendar year he says:

"The position of the British export trade may be thus summed up: The interior market, was, as a whole, lost to British exporters, but the meat-packers continued to use a certain number of 'drawback' plates, and there is still a limited consumption of British plates for certain special purposes. The Atlantic coast still offered a very large market for 'drawback' plates, and a much reduced one for plates not intended to be re-exported, and the gulf coast took a moderate number of Welsh plates for local consumption. The only section of the market that was still wholly supplied by South Wales was the Pacific coast. Taking the Pacific coast import at 54,000,000 pounds, that of the gulf coast at 5,000,000 pounds, and that of 'drawback' plates at 130,000,000 pounds, there remains an import of 60,000,000 pounds of last year for consumption in the United States, which must be distributed between the Atlantic coast and interior points."

According to Mr. O'Beirne's calculations, it is estimated that British plates can be landed approximately at points on Atlantic coast for \$3.88, or 28 cents (1s 2d) above price of American plates there. At Pacific ports for \$3.84, or 22½ cents (11d) below price of American plates there. At Chicago for \$3.88, or over 30 cents (1s 3d) above price of Indiana-made plates. At New Orleans for \$3.81, or 16 cents (8d) above price of Indiana plates there. From these figures it appears that, exclusive of the small amount used in foreign shipments, the American product controls the entire markets of the country, except those of the Pacific coast. The higher cost there comes from the long distance it must be carried by rail, from Indiana or Pennsylvania to San Francisco, as compared with the cheaper ocean freights which the British product enjoys. It can be carried through the Suez canal across the Pacific to San Francisco without shifting or transshipment. The trade of the Pacific coast is important and becoming more so, owing to the rapid growth of the canning industry, and it should be supplied by American factories.

Were the Nicaragua canal completed, the trade would come to the Eastern States, as the plate could be shipped from New York or Philadelphia, through the canal to San Francisco. But as that canal is not completed, and some years must elapse before it is, why should not a tin plate factory be established on the coast? As the raw tin has to be imported, and as the countries bordering on the Straits of Malacca supply most of that article used in this country, it could be brought to the coast at much less cost than to the Eastern States, as it is nearly a direct voyage from the Straits to San Francisco. The tin is now shipped to England, manufactured, and then re-shipped to San Francisco for a market. The domestic manufacturer would therefore have the double advantage of the duty levied upon the foreign article and the difference in cost of transportation,

while his market would be practically at the door of his factory. Here is an opportunity for an enterprise which promises good returns, as there is every reason to believe that the demand for tinned plates will increase rather than decrease with the development of that section of the country.

BEET SUGAR.

In a recent interview, Secretary Wilson, in speaking of beet sugar, is reported to have said:

"The more I see of this beet sugar business and the more I look into its vast possibilities, the more I am surprised that the American people have been buying such quantities abroad. There is really no more reason why we should buy sugar abroad than wheat. We have in this country, land as well adapted to the growth of sugar beets as anywhere in the world and it is a remarkable fact that our people have been so long in seeing the possibilities and putting forward every effort toward the accomplishment of this end. Sugar enters into our consumption to such a large and national extent that the triumph of bringing about the growing of all our own products in this direction would be no small one. The way in which the American farmers are taking hold of it, shows what a comparatively easy matter it would have been at any time of late years to establish the industry on a permanent basis, and as I say, it seems strange that far-sighted men have not seen the advantage to result to those successfully fostering it. In my trip through the West I found farmers generally enthusiastic over the subject, all of them anxious, and hoping that the analysis to be made of their beets would show such a satisfactory percentage of sugar as to enable them to at once enter into the growth of the beet as a crop. In fact, the danger lies in over-enthusiasm; in the large outlay of money and establishments of plants in sections where the beet cannot be profitably grown."

"The McKinley bounty on sugar was operating well and if it had continued would have so encouraged both cane and beet sugar industries that we would, by this time, be quite independent of foreign markets in this respect. The bounty proposed for beet sugar in the Dingley tariff bill would have still further stimulated the industry, but even as it is, I believe we are on the way to seeing a good quality of sugar supplied from a great many points in the United States. The sugar beet thrives on a variety of soils, being best adapted to sandy loams of moderate fertility, and I presume that reports of our analyses will show great areas in various sections of the country capable of raising beets containing a sufficient percentage of saccharine matter to warrant the building of factories and the planting of large areas."

"About 2,200 of the farmers of the country have grown beets for tests and we are now receiving samples for analysis. If everything goes right we will have a complete report on the subject by the first of the year. This will show the most desirable sections for entering into the beet industry and will enable operators to erect beet sugar refineries with some degree of assurance that the industry will be a success in their particular sections."

"Any new crop which takes the place of present crops, and thereby reduces their acreage, tends to stimulate the prices received for those crops, by diminishing their yield, and this is one of the indirect ways in which a general cultivation of the sugar beet will better the condition of the farmer. The saving of \$100,000,000 to the country will give that amount to labor. Sugar represents labor almost entirely, from the growing of the seed to the sugar barrel. The diversification of our industries to this extent will have a tendency to help the prices of other crops."

The Secretary should not be surprised. He is a representative farmer, and before becoming secretary of agriculture did he ever take the trouble to investigate this sugar business? He evidently did not. Why should he be surprised that others have not. He was too busy raising corn, and cattle and hogs. So are other farmers. They have not the time nor the facilities for investigating the subject. In the early seventies a great deal of missionary

work was done in the beet sugar business. The result was the establishment of a few factories in California and one in Colorado, which have maintained themselves, and under the new law may become profitable investments. We hope so, as their success may induce capitalists to interest themselves in this industry, and build factories. We see no other means of starting the industry upon a sufficiently large scale to become a factor in supplying the country with sugar of its own production.

While the business looks attractive, it is not yet settled that it can be made remunerative in many states. It is not a question of producing the beets, our farmers can do that in any quantity whenever a market is assured. It is the question of the investment of several hundred thousands of dollars in a factory which is the stumbling block in the pathway of those who are laboring to put the United States in a position to produce the enormous amount of sugar it consumes. Solve that problem, and the industry will grow rapidly.

What the Secretary says of the desirability of the industry, and the influence it would have upon the agriculture of many states is entirely true. It would do much to make other crops more remunerative by reducing their acreage, and it would be a great aid in the production of cheap meats. Here are a couple of items which show the necessity for caution on the part of farmers:

"It is reported that the Menomonie (Wis.) beet sugar factory will not start up this fall. This is the factory that fooled the farmers in its vicinity into growing beets for sugar last year: was not ready to run when the beets were matured; advised that they be stored to protect them from frost until later, which was done, at considerable expense, of course; but they spoiled, the factory went into the hands of a receiver, and the growers of the beets suffered serious losses. But last spring the farmers were again induced to grow sugar beets, by assurances that the factory would run this fall, but again they are deceived and wronged, and they have beets on hand grown for sugar, at a cost of \$25 to \$30 an acre, but which are worth no more for stock food than mangels or other roots that cost four to five dollars an acre to grow."

"At Merrillan, Wis., a factory was promised farmers if they would go on and grow beets for it. The beets were grown, but the factory has not yet materialized, and undoubtedly the beets will have to be fed out to stock."

It is time enough to grow beets after a factory is assured—not mere promises, but assured, and with substantial financial backing. There are several points in this State where factories could be erected with every prospect of success, and we hope, before next spring, to be able to chronicle the fact that they are in course of erection.

It is evident that the potato crop is much short of earlier estimates, it having been affected in many districts by the recent frosts. The crop is also short in some parts of Europe, and a practical failure in Ireland. It is apparent therefore, that late potatoes of good quality are likely to be considerably higher, and some growers are talking of 60 to 70 cents per bushel on the farm. If they reach that price, which would mean 70 to 85 cents per bushel to the consumer, there will be a greatly lessened demand, as other articles of food are relatively cheaper. The high prices of potatoes will strengthen the bean market, which are largely used to replace the potato when the latter gets very high in price. Just the same some of the potato growing counties of the State have a bonanza this season, as prices cannot help being high for the entire crop year.

RUSSIAN GRAIN CROPS.

Consul Heenan, at Odessa, Russia, sends the State Department some interesting and valuable information concerning the Russian grain crops. He says that the crops over an extensive area have failed. The beginning of the trouble was the dry winter, causing the failure of half the wheat sown. With a favorable spring and re-sowing the prospects were good, however, almost up to cutting time. Then came the wettest season known, rain and hail destroyed the ripe grain. In large areas no effort was made to harvest. Samples of the new wheat are inferior in quality and weight. The yield is from four to six bushels per acre for winter and spring. Barley is discolored and under weight. Rye is much damaged and will be under the average crop. Oats alone are in favorable condition. Mr. Heenan says that but little wheat will be shipped from Russia during the season of 1897-98 for the simple reason that there is little available for export. The failure of the wheat crops in Austria-Hungary, Roumania and Bulgaria has brought buyers into Russia from these countries and the wheat will go to them by rail. How much of this wheat Russia can afford to let go is a question now being discussed. While hints are thrown out that the export of cereals may be altogether prohibited, the consul believes these have no foundation and that the Russian government will never again make the mistake it did in the famine year of prohibiting exports.

There is great need of rain in most sections of this State to enable farmers to finish up their seeding and to start the wheat now in the ground. The area prepared for wheat has been largely increased, but the long drought has prevented some of it being sown. The condition of the wheat fields this fall will exercise an important influence upon the markets during the winter. At the present writing the outlook for the new crop is not at all promising, and all the winter wheat states are in about the same condition as Michigan.

The old scheme of a ship canal between the southern end of Lake Michigan and Lake Erie is again being exploited. The new scheme is for a canal nine feet deep, and the cost is put at \$15,000,000. Congress is to be asked for an appropriation for the purpose. The enterprise will never be started, because absolute facts show that it would neither be a saving of time or money to the shipping interests. There is too good a waterway through the Straits of Mackinaw, where the largest vessels can carry full loads and run at the highest rate of speed attainable. The canal suggested would require small draft boats, and a low rate of speed to protect its banks. It is a Utopian scheme that will never materialize.

COST ONLY \$18.

The Michigan Farmer.

GENTLEMEN.—The sewing machine we got from you about three years ago gives entire satisfaction and is as good as any we could get from local agents for \$35 cash.

With best wishes for the success of the MICHIGAN FARMER, I remain yours respectfully,

E. L. MARVIN,
94 Hastings St., Grand Rapids, Mich.

ONE CENT PER MILE.

Nashville Exposition via Michigan Central.
One cent per mile in each direction for the round trip is authorized from all Michigan Central Stations to Nashville, Tenn., on account of Detroit and Michigan Day at the Exposition.

The fare from Detroit will be \$11.40 for round trip. Tickets on sale Oct. 4 & 5, good for return seven days from date of issue.

Through sleeping car arrangements are being made for special parties who will leave Detroit on the "Southern Flyer" on the 4th, and the "Nashville Express" on the 5th.

If you wish to reserve accommodations, apply early to Jos S. HATZ, Michigan Passenger Agent Michigan Central, Detroit.

THE GREATEST COMBINATION OFFER of the CENTURY.

THE CLEVELAND DAILY WORLD AND THE MICHIGAN FARMER
BOTH TO JANUARY 1, 1899, FOR ONLY \$1.50.

We have been trying for a long time to make an arrangement whereby we could furnish the readers of the MICHIGAN FARMER a daily newspaper which would contain daily a correct and reliable market report from all of the leading market centers as well as give the daily news of the world and at a price all could afford. We have at last succeeded in making an arrangement, as you will see by the heading above.

The Cleveland Daily World (Interstate Edition), regular price \$2 per year, will be made up of from 4 to 8 pages daily (newspaper size), will be printed and mailed in the night so that very nearly all of our subscribers in Michigan and adjoining States will get them the day they are dated. Prominence will be given the live stock, wool, grain, hay and produce markets of Detroit, Mich., Pittsburgh, Pa. (E. Liberty), Chicago, Ill., Buffalo, N. Y., New York, N. Y., Boston, Mass., Cincinnati, Ohio, and Cleveland, Ohio, as well as the very latest news of the globe and the most interesting features of the best dailies. All news and market reports will be received in full by telegraph and will include everything up to the hour of going to press.

To new subscribers both papers will start with the first issue in October (no back numbers will be sent) and continue to January 1, 1899 (15 months if ordered at once), all for only \$1.50. Present subscribers can renew their subscriptions to the M. F. one year from date of their present time and have the World sent to January, 1899. Orders for the World will not be taken unless accompanied by an order for the FARMER, both papers for the same person.

Agents will be allowed the same commissions, specials, etc., on this combination as though the order was for the M. F. alone. Agents will find this a great "puller." Address all orders to

THE MICHIGAN FARMER, Detroit, Mich.

THE ARMADA FAIR.

The Armada Agricultural Society held their twenty-fifth annual fair at Armada, Macomb county, on Sept. 22, 23 and 24. The floral hall was well filled and tastefully arranged. There was a very small exhibit of grain, vegetables, fruit, etc., but some fine samples of each. For various reasons the attendance was not as large this year as usual; the attendance on Friday was about 1,000, and helped to make the fair a financial success. The date for holding the next fair has been changed to the first week in October, and the twenty-sixth annual fair will be held at Armada October 4, 5 and 6, 1898. Every effort will be made to make the twenty-sixth annual fair the largest, best, most attractive and successful fair ever held at Armada. We hope the people of Armada and vicinity and Macomb and adjoining counties, will interest themselves and turn out and make the twenty-sixth annual fair the most successful ever held in Macomb county. The Michigan Farmer will be there, and we want to see everybody else there.

The following are a few of the principal exhibits:

Floral Hall—Fancy work: Mrs. Ida Cole, Mrs. Frank Parker, Mrs. D. T. Smith, Mrs. E. L. Kennedy, Miss Josie Kennedy and Mrs. R. V. Throop, Romeo. Crayon work: Miss Lee M. Ware, Armada. Flowers: Mrs. Carrie Wilder and Mrs. Wm. Wellman, Armada. Underwear: Dudley Brothers, Armada. Carriages: S. M. Fangboner, Mt. Vernon. Collection of jack-knife work: John Throop, Romeo. Double and single harness: John Birth, Armada.

Horses—Edward Conner, Armada, Clydesdale stallion; George Braidwood, Almont, two Percheron stallions; John Maver, Armada, one farm team; H. L. Edwards, Armada, two colts.

Cattle—W. D. Pettibone, Armada, 15 head of thoroughbred and grade Shorthorns; Homer Loomis, Armada, 4 head of grade Shorthorns; Frank A. Bywater, Memphis, 5 head of registered Jersey cows.

Sheep—Wm. C. Smith, Washington, 5 pens of registered Hampshire Downs; Frank A. Bywater, Memphis, 4 pens of registered Shropshire Downs; Homer Loomis, Armada, 9 pens of registered Shropshire Downs; Eugene Ridley, Armada, 1 pen of registered Shropshire Downs; B. F. Loomis, Doyle, 1 pen of registered Shropshire Downs; Solomon Dawson, Richmond, 2 pens of registered Shropshire Downs; Wm. M. Chapman, Romeo, 12 pens of registered Merinos.

Swine—Wm. C. Smith, Washington, 3 pens of registered Duroc Jerseys; Frank A. Bywater, Memphis, 5 pens of registered Berkshires; Wm. M. Chapman, Romeo, 2 pens of registered Chester Whites; Frank Bywater, Memphis, 2 pens of Improved Large Yorkshires.

Poultry—R. E. Miller, New Haven, and Chancy Hulbert, Armada.

Bees, Bee Supplies, Honey, Potato Crates, etc.—Proctor Brothers, Romeo.

Mr. C. S. Bliss, of Saginaw county, recently asked for the experience of any one who had tried saltpeter or kerosene oil to make stumps burn out more quickly. Mr. A. F. Searing, of Twin Lake, this State, writes that he tried both, and they were complete failures.

An important auction sale of Oxford Down sheep, Jersey and Holstein cattle, Tamworth and Poland-China swine, all registered stock, besides milch cows, and yearling grade Jersey heifers, is announced to be held at Anchorwood Farm, near Flint, Genesee county, on Tuesday, October 12th. E. O. Wood is proprietor of the farm, and the sale is positive, as all his farm tools, machinery, etc., are also catalogued. Particulars will be found in an advertisement in another column.

NEWS SUMMARY.

Michigan.

It is said the heavy frosts have spoiled the cranberry crop in the marshes near East Tawas.

The little town of Riverdale, nine miles west of Alma, was almost completely wiped out by fire one night last week.

W. S. Hopkins, a prominent and wealthy St. Clair business man, fell from a street car in Detroit last week in such a way as to fracture his skull. He died the following day.

The coroner's jury in the inquest upon the death of Cashier Struble, of the bank at Shepherd, returned a verdict of suicide last Tuesday morning. The jury was out about 18 hours and the verdict was a complete surprise to the majority of citizens in that section, as well as a great disappointment to the friends of the dead man.

An unusually large acreage of tomatoes was planted around Holly this year for the canning factory at that place, but the tomato worms were so numerous and hard working that the crop was a small one. And most of the fruit that the worms left the frost spoiled, so that the farmers won't realize much on this particular crop this year.—Oakland Co. Post.

The Agricultural College Record says the present indications are that the sugar beet experiments on the farm will be somewhat disturbed by the presence of a serious disease which has made its appearance in the crop. It is a fungous disease, called the spot disease of beets, or cercospora beticola. It is still gaining ground and will, to say the least, greatly lessen the crop.

General.

Five men lost their lives in a burning coal mine at Birmingham, Ala., last week.

Nearly one-third of Kentucky's tobacco crop is reported to have been killed by recent frosts.

The John Gund Brewing Co.'s plant at Lacrosse, Wis., was entirely destroyed by fire last week, the loss exceeding \$300,000.

A body of strikers near Hazleton, Pa., got to quarreling among themselves last Sunday and the result was a bloody riot in which nine were killed

and more than 50 injured. A number of the participants are in jail. The strikers in that vicinity are nearly all Poles.

The Republicans of Greater New York refused to endorse the nomination of Seth Low for mayor and have named a separate ticket, headed by ex-Secretary of the Navy Benjamin F. Tracy. A Gold Democrat was named for comptroller, which makes it look as if Gen. Tracy will encounter no opposition from that wing of the Democracy. The friends of silver have nominated Hon. Henry George, but he declares he will decline in case his nomination is endorsed by Tammany. In that event Tammany will probably name a man satisfactory to the free silver element. Probably the only other candidate who will figure prominently is Hon. Seth Low, of Brooklyn, who has been put forward by the Citizens' Union and will be strongly supported by the independent voters.

When writing to advertisers please mention Michigan Farmer.

Hood's Pills
Best to take after dinner; prevent distress, aid digestion, cure constipation. Purely vegetable; do not gripe or cause pain. Sold by all druggists. 25 cents. Prepared only by C. L. Hood & Co., Lowell, Mass.

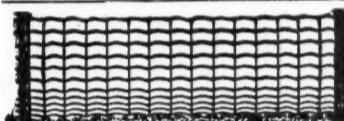
High Grade Sewing Machine for \$5.00.

Dear Editor:—Please tell your readers that we will furnish our high-grade Iowa sewing machine for \$5.00 to anyone who will assist us in distributing our big 928-page 3-pound catalogues. We sell sewing machines outright from \$8.50 up, guarantee them 10 years and allow 30 days trial free. For full particulars cut this notice out and send to SEARS, ROEBUCK & CO. (Inc.), Chicago, Ill.

Magic Lanterns.

LIVING PICTURE APPARATUS. MONEY IN IT. Send for catalog. C. T. MILLIGAN, 728 Chestnut St., Philadelphia, Pa.

SEEDS Clover, Timothy and all seeds for the farm. If your dealers do not handle our seeds write for prices. If any beans to sell, send sample, stating quantity. We will make you a firm bid. Largest Bean Dealers in the State. S. M. ISBELL & CO., 125, 127 & 129 Pearl St. West, Jackson, Mich.



The Coiled Spring
feature, as applied to wire fences, was introduced to public use by us; and we only have a U. S. patent thereon.
PAGE WOVEN WIRE FENCE CO., Adrain, Mich.

WIRE **FENCING FREE**
From Dealer's Profits.
Direct from factory to farm. 10 to 20 cents per rod. Free circulars.
EUREKA FENCE CO., Box Q, Richmond, Ind.

SAVE 1/2 YOUR FUEL
By using our (stove pipe) RADIATOR.
With its 120 Cross Tubes,
ONE stove or furnace does the work of TWO. Drop postal for proofs from prominent men.
ROCHESTER RADIATOR COMPANY, 29 Furnace St., ROCHESTER, N. Y.

MOTHERS Your Children cured of Bed-wetting. Sample free.
Dr. F. E. MAY, Bloomington, Ill.

All about PATENTS.
Send for book on patents FREE. It pays to protect your ideas at once.
FISK & THOMAS, PATENTS AND PATENT LAW.
42 and 43 Hodges Building, Detroit, Mich.

CANCERS! TUMORS! Mizpah Cancer Remedy! Perfect cure at your home. Never lost a single case. Write for circulars. MIZPAH MEDICINE CO., Saratoga Springs, N.Y.

EARL D. BABST, 56 Moffatt Building, - Detroit, Mich.
Attorney-at-Law.
Practice in all courts; Collections made anywhere in U. S.; special attention to law of the farm. Attorney for Lawrence Pub. Co., also other references.

FOR SALE. 160 ACRES; best of soil; excellent buildings; 14 miles from Ovid, Mich. One of the best farms in Shiawasse county. Inquire of C. A. JOHNSON. Insurance and Real Estate Agent, Ovid, Mich.

The Household.

CONDUCTED BY MRS. ELLA E. ROCKWOOD, FLINT, MICH.

We should be pleased to have any of our readers who take an interest in household topics, send in their views and opinions upon any subject which is under discussion, or which they wish discussed. The invitation is general, and we hope to see it accepted by many. Address all letters for The Household to Mrs. Ella E. Rockwood, Flint, Mich.

THE SHUTTLECOCK CRY OF THE HEART.

We wish to come back with as fervid desire—

As ever we wish to depart:
"I want to go somewhere," "I want to get back,"
Are the shuttlecock cries of the heart.

When the high tide of summer breaks over the year
We would float on its flowery crest,
Till it leaves us adrift on the pine covered hills.
Or the buttercup valleys of rest.

But the sad winds of autumn, like wandering cries,
Seem the voices of spirits that roam,
And they echo our thoughts, through the deepening skies,
Our longing and hunger for home.

And blessed are they who return to their homes—
As blessed as they who depart;
"I want to go somewhere," "I want to get back,"
Are the shuttlecock cries of the heart.
—Sam Walter Foss, in Demorest's Family Magazine.

HOME CHATS WITH FARMERS' WIVES.

A PLEA FOR THE BIG BOYS.

"I never went to school after I was twelve years old," said a successful business man the other day. "Father died at that time," he continued, "and I had to go to work for myself. But I have been greatly hampered all my life by my lack of education. To be sure, I have gotten together quite a property, but I feel that I could have done much better if I had had the advantages of a good education."

How many men say this same thing, and feeling the lack in their own case are anxious that their sons shall have better opportunities than they had. We see this on every hand. Farmers' sons are being sent to high schools and colleges in very much larger numbers now than ever before. Farmers are seeing the necessity of education.

The day has past when country people were content to be ignorant and illiterate. Our boys and girls want to be up with the times and it is right that they should.

* * *

While there are many farmers' boys who are attending school, there are many more who as soon as they are large enough to work are obliged to stay out and take a man's place in the field. It is for these I would plead, the boy who gets but three or four months' schooling in a year after he is 12 years old. Before that time most boys think more about play than about books. One year at school after that counts more than two previously.

I know it seems as if we cannot get along without them, there are so many things a boy can do to save hiring a man, but what compensation can be equivalent to the time lost from school? How few are the hours spent in the schoolroom and how important that they be made as much of as possible.

Did you ever go into a schoolroom in winter when the big boys had begun to attend and note how in size they tower over others in the same classes? There you will very likely see small girls fully up with these big fellows in their studies. Do you wonder that these boys are embarrassed, and that they feel ashamed to go to school at all? I tell you it requires Spartan courage to enable a strapping six-footer to sit in a class with mere children and feel that really they know more about books than he does. And why is this? Simply because the boy must stay out to help in the field when he ought to be in school.

As a rule girls learn more easily than

boys, yet they attend school much more regularly, have twice the chance that the boys have to get an education. Their services in the home are not so valuable but that they can be spared to go to school; it is a lamentable fact that boys cannot do this, but must work from April to December upon the farm. Is it to be wondered at that so many of them grow up deficient in learning to a lamentable degree? We hear very little about boys' rights, but every boy has a right to a good education, and he ought to have it.

A PLEASANT TRIP.

Home again, under our own vine and fig tree, we want to tell you what a delightful vacation we had on The Michigan Farmer excursion.

Leaving "Overlook Farm" in the afternoon and leisurely driving to Detroit we arrived in time to enjoy the reception tendered by the Zenner Disinfectant Co. at their rooms on Atwater street. Here cordial welcome awaited us, and while partaking of substantial refreshments and dainty sweets, old friends were greeted and new acquaintances met. At 11 o'clock, about a hundred of us, wearing the neat "Farmer" badge took passage on the City of Alpena, and after bidding Detroit, in all its brilliant midnight glory, adieu, as we rounded Belle Isle, we retired for the night, only to be aroused a few hours later by the toot, toot, of the fog horn mingling its soothing (?) music with our dreams, and daybreak found us just below the Oakland with a fine ride in the river still in store, and delightfully transparent air through which to view the landscape and river scenery.

Our first stop was at Port Huron and later stops were made at Sand Beach, Oscoda and Alpena and at early dawn next morning Cheboygan lights appeared.

At 5 o'clock the Island of Mackinac, bathed in crisp, morning sunlight, came in range of vision, and is, indeed, an object of beauty. On arrival our party quickly scattered, some taking carriages and enjoying the three hours allotted before returning on same boat, others catching the first boat up to the "Soo," and some with wheels spinning through the winding paths, o'er hill and dale to the various points of interest. As for our particular party we spent the morning viewing old Fort Mackinac and Arch Rock, under the guidance of Capt. Thayer, superintendent of the State park (for such the fort and most of the island really is), who spared no pains in making us welcome and telling us interesting bits of history as we climbed in the block house with the funny little windows, that was built in 1780.

The afternoon we spent on the "Islander," a little pleasure steamer going out to Les Cheneaux (the Snows). This name embraces about a hundred wooded islands with a number of summer cottages and hotels upon them. The trip is very pretty and restful. Then we had permits to go aboard the floating palace, the new "Northwest," which resembles most closely the ocean steamers. It is a huge boat, and all appointments are exquisite.

In the evening "The Grand," a magnificent hotel with outlook across to Mackinaw City, claimed our attention. Here the Naval Reserves from the "Michigan," which was stationed at the island a few weeks, had decorated the large hall and were giving a fine party.

The Astor House claimed our thought next morning for a while, and then rowing out to the new revenue cutter, the "Gresham," we were cordially welcomed, and in replying to our remarks on its beauty the officer responded with pleasing brogue. "Yes, she is right purty." The entire fleet of three vessels were in port, the first time they had been together this year.

Returning to the island we greeted our parents, who had come by railroad through the western part of the State to meet us here, and in company we spent the remaining few hours in driving about. We went to Sugar Loaf, which is an abrupt point of stone, rising 90 feet high. Thence to Fort Holmes, which from the tower commands a magnificent view of the whole island and both peninsulas. The island is larger and more rocky than we had thought and far more picturesque, studded with beautiful summer homes.

We must leave the island now, for with a little reluctance at losing the

lake trip, we exchange tickets with our parents and return via Bay View, Petoskey, Rockey Beach, Traverse City and Grand Rapids, spending a day or so at each place with friends.

I must tell you of the good work going on at Rockey Beach or Bay Shore. I was the guest of Rev. and Mrs. Winfield S. Sly, of Lansing, who were at their summer cottage here in this most charming spot overlooking the bay with a pebbly beach on one side and sand beach on the other; no more delightful place could be imagined for little children. Here it is that Mr. Sly, president of the Rockey Beach Benevolent Association, with headquarters at Lansing, is building up an orphans' home. The work is begun, but is in need of assistance. It is Christian, but undenominational, and any aid would be gladly received. Hundreds of homeless children have found good homes through his kind care, and he hopes also to have Rocky Beach a fresh air station for the city poor. Sisters, I have known of this good work for some time and wish that we could help, if only a little.

I reached Detroit just in time for the Sunday school rally, and enjoyed the day on Belle Isle with the children, having had a most delightful round trip, and much credit is due The Farmer for the pleasant outing. There were many expressions of regret at not meeting our Household editor on the trip, but hope she can go on the next excursion, and, sisters, you will enjoy it. "Many a mickle makes a muckle." Save 'em all and go next year.

Oakland Co. NELLIE SNOOK.
(The Household editor regrets exceedingly that she could not have gone with our friends on that excursion. She is ready to promise to be one of the party next year, however, if she is alive and well.)

WHAT M. SAW AT THE STATE FAIR.

It had never been my good fortune to attend a state fair until this fall, and although the heat was intense, and a large crowd on the grounds, yet I managed to see in one day much that interested me. First came the long electric car ride of several miles, during which we passed through the principal streets of Grand Rapids, where the merchants were all seemingly vying with each other in offering special attractions and "bargains" during the week of the fair.

The Soldiers' Home was also on our route, and is an imposing edifice, prettily situated, surrounded by lovely lawns and brilliant flower beds. On the fair grounds was a noticeable absence of side-shows and games of chance, which was appreciated, I am sure, by parents of young boys, and perhaps older ones, too. There were almost numberless booths where ice cream, lemonade, etc., were dispensed to a sweltering public. Many churches, societies and orders were represented there with eatables of all descriptions and seemed to be well patronized about the noon hour.

The art hall was handsomely decorated inside with flags and bunting very artistically arranged, and much credit is due to Grand Rapids residents for helping to make the fair a success. The display of pianos and organs was fine, and the music attracted quite a crowd. The furniture, all correctly arranged and representing different rooms in a well appointed home, made one almost long to purchase something new to make the house look a little cozier at the fall cleaning that will soon be here. The visitors were also invited to inspect the merits of the different sewing machines, washers, stoves and ranges, and even a bathtub with an attachment that converted it on a moment's notice into a handsome couch.

The fancy work showed much taste and skill, and some pretty crotchetted articles there were the handwork of

an old lady of seventy-five. The piece-work quilts and crazy-quilts were no more numerous than one could see at almost any county fair. One silk crazy-quilt had blocks not very large and the center piece of each had a pansy embroidered in natural colors.

The exhibit of paintings was, indeed, very fine; some of the scenes representing country life seemed very life-like. The pictures in black and white were also well executed; one, a pretty peaceful moonlight scene was in direct contrast to one portraying a terrific windstorm in which the trees seemed to be really bending and swaying. There was a large collection of enlarged pictures from photographs, and the new sculpture photos which are so unique and pretty that they bid fair to soon supersede the present style. Of the paintings, a fruit piece, and another representing red roses in a bowl and a large bunch loosely folded in a newspaper looked as natural as the real ones.

The school work, done by pupils of the different grades, was interesting, and there were also several pictures drawn by an old soldier, a resident of the Soldiers' Home.

In the horticultural hall was a sight to make one's mouth water for the luscious looking peaches, pears, grapes, etc. A banana tree was there, flourishing with clusters of the fruit, and an orange tree close by. Long tables of vegetables showed the result of many, many farmers and gardeners' work. A fine line of grains and seeds and grasses seemed of much importance to some farmer friends, who, when we passed were zealously discussing their merits. A great profusion of flowers made the air fragrant in floral hall; the potted plants, choice cut bouquets, palms and ferns surely must have delighted all flower lovers. Near the apiary was an interesting place to linger; and close by, the parchment-lined butter boxes were being distributed. There was but a small exhibit of fish: only one case of gold fish, but they were very amusing, especially to the little folks.

The mining department was a source of interest to many, as was also the fine display of machinery, wire fences, windmills, etc. A poultry fancier could have seen there all the different breeds he had ever heard of, but the day was so sultry the poor feathered creatures could not enjoy the blue ribbons that were awarded them.

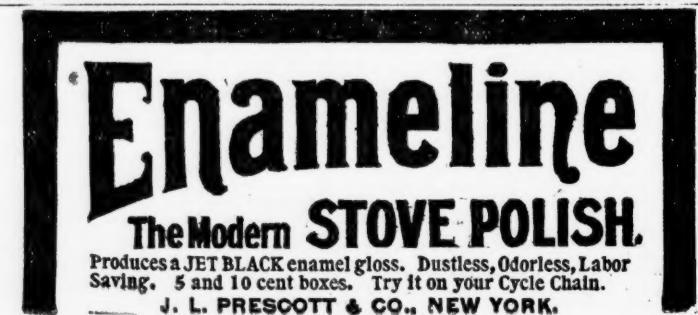
All the stock, especially the sheep, seemed to feel the oppressive heat, but they had an easy time compared to the poor race horses; yet many seemed to enjoy the races, as indicated by the appearance of the grand stand. A tent from the Agricultural College was on the grounds, with a fine showing of views, etc., while near the main entrance to the art building was The Michigan Farmer tent with Editor J. H. Brown presiding. An ample supply of chairs and tables made a convenient place for parties to eat who had brought their dinner to the fair, and many others were glad to avail themselves of an opportunity to sit and rest in the shade.

Very tired, we left the grounds about 5 p. m., but well satisfied with a day well spent.

Middleville. ■■■■■ A NICE SUMMER DRINK.

To prepare grape juice for bottling or canning remove the fruit from the stems and place in an agate kettle with a little water. Scald until the grapes are soft, then turn into a cloth bag and drain as for jelly. To each quart of the juice add half a cup of granulated sugar and return to the kettle. Let it boil up, skim carefully and seal like canned fruit. The hot juice may be poured into bottles and it will keep equally as well if the corks are well covered with wax after pressing them firmly in place.

This makes an ideal summer drink, and is frequently so used, two or three tablespoonfuls being poured into a



tumbler which is then filled with water.

Thus prepared we have the true wine of the grape, unfermented, a much better as well as safer article for family use than that which is fermented.

FRIENDS AND LETTER WRITING.

Have you still room for another admirer of the Household? I will come in quietly and take a stool at our editor's feet, but mind, I won't promise to keep quiet, for I never was known to do that. I shall not wait for an introduction either, for I know you all.

What I have to say is about friends and letter writing. I am just recovering from an illness and I wish you all knew what a comfort my friends and letters were to me. One mail brought me six letters and Oh, how eagerly I grasped them! How precious every word was! How comforting to know that my friends were thinking of me and though too far away to visit me, would give me a portion of the day by writing.

Now, sisters, if we wish to do some good we can all write to our friends. Not only those who are ill, but those enjoying the best of health. I would aim to be helpful and sympathetic.

There will be times when we must write our pleasure in some great joy which has come to another; still more, surely, when we must express sympathy in heavy sorrow. We will not only wish to do this, but it will be our most sacred duty. Some friend will need our courageous, uplifting word. How can we give it if we have neglected this talent? No one can help but see, too, the far-reaching spiritual power of letters. Therefore this seems to me one of the talents to be worked with and to be accounted for to our Master.

How much circumstances have to do with the choice of friends. The country and neighborhood in which we live, the school we have attended and even the table we sit at may determine all. We know He set a sacred seal on friendship when he said, "I have called you friends," and the proof He gave "For all things that I have heard from my Father I have made known unto you." You see then as now confidence was the test. Is it any wonder we love our friends and love some so much more than others?

I have learned to be discreet and to remember, "Thy friend has a friend; thy friend's friend has a friend." While a frank, confiding nature is usually a noble one, there is a certain dignity of reserve which puts some thoughts and feelings under lock and does not give away the key. And one beautiful thing is, if only our choice has been wise; if our friends are of the right sort. That is if they and you are friends of God there need be no end to the dear relationship. It can be continued up there!

JOE.

MOTHERHOOD.

A few mornings since, little Sadie, the 7-year-old daughter of a near neighbor (who, by the way, has had the distinction, until recently, of being "baby" for all that time), came in while we were at breakfast, bringing me a note which read, "Can Sadie stay with you to-day?"

Some time during the day Mr.—came over to say that another daughter had been added to their little band. It devolved upon me to inform my little guest, who always designates me as "auntie;" so drawing her to me towards evening, I took her in my arms and holding her close I said: "Sadie, dear, I have something to tell you. Jesus has sent a little baby sister to you to-day, and by and by we will go over and see it." I shall never forget the amazement pictured on her face. She looked at me with her big brown eyes and then covered them with her hands and sobbed for joy. Then she jumped up and looking at me earnestly she said, "Auntie, it can't be possible! It can't be possible!" And when we started for her home a few minutes later, for I couldn't keep her longer, her feet hardly touched the ground, so eager was she to reach there, and my tears came along with the smiles when we reached mamma's bedside and she kissed and caressed baby's face, feet and hands, saying softly over and over again to herself: "My little sister. It can't be possible."

And while I sat there I thought what a grand thing it is to be a mother, and may the Father bless this one as he indeed has in adding another lamb to

her flock, and you would need only to go with me as I "run in" occasionally to see that the "new baby" is loved and welcomed by all the family. No, A. H. J., there are some homes where, thanks be to God, babies are not out of fashion.

I hold in my hand a letter from a dear young friend, which has just reached me. It runs, "How I wish you could have seen our little darling. Oh, how I hated to give him up; he only lived two weeks, but was so dear to us. Why couldn't he have been spared, and my heart ached in deep sympathy, for hadn't I "passed under the rod." Still there are those who are childless because:

"They might not learn it if they would,
This strange sweet thing she understands,
That came to her with motherhood
And tiny touch of baby hands."

C. M. McC.

SHORT STOPS.

N. O. A., writes: Good evening, Sisters: May I come in for a few minutes, just to tell Hope Daring I thought she was talking about me in regard to over-work as false economy. I will not do it again.

I wish to join our editor in her plea to spare the birds, and I try to teach my little ones how wrong it is to destroy them or their nests. They will say, "Mamma, where are our little birds to-day? Has somebody killed them?" The birds come and eat from the back porch, and the children stand and watch for hours to see them.

I thought of the story, "Beside the Bonnie Briar Bush," as I prepared my little ones for a visit to grandpa's, for we have not been there for so long. They were so eager to get there. As we were going I received a letter from a niece of mine in far off Colorado, and she told of all the sights and pleasures of the journey over the Rocky mountains, but ended by saying the journey was only sad after all, for she was going farther from the home nest. She says, "You know it is seven years since I saw papa or mamma." And I thought what a difference between a few months and seven long years to see the home folks.

If every neighborhood had such a cheery friend as A. H. J., I think we would have better mothers. Some women in this neighborhood think it a disgrace to bear children. I have three little ones, and I would not give them up for all the pleasures of this world.

M. writes: In making dresses for the little girls that are growing tall so fast, I have found a satisfactory method that does not necessitate letting down of the hem. In making lined dresses, put a tuck in the lining, and in the cotton ones that are unlined the tuck goes on the under side of the hem. Run the tucks by hand and the dress is easily lengthened when needed.

WOVEN RUGS.

I want to tell about some pretty rugs I have seen lately. They are woven like a rag carpet. They are done in hit-or-miss, some with solid borders, others without borders and some are in stripes. A very pretty one was alternate stripes of hit-or-miss, and plain black stripes; the stripes are about five inches wide. The one I admire most is entirely hit-or-miss evenly mixed with very dark and bright colors. They are three-quarters of a yard wide, and one and a half yards long. The warp is bright colors. Four threads of warp are used in forming tiny squares and these four threads of warp are about three-quarters of an inch apart. The rags when beaten together look about as thick as the small end of a goosequill. Some very handsome ones were made of all silk; others of woolen, some woolen and cotton mixed; and the ones made of all cotton are very nice, but I like all woolen rugs the best.

I am sewing woolen rags to have one made in hit-or-miss style. The weaver tells me it takes one and a half pounds of cotton rags to one yard of weaving, and in woolen a little more.

The price for weaving is 26 cents a yard without a border; with a border 28 cents a yard. (It costs less than this in the country. Ed.) The weaver finds the warp. The rags are cut and sewed precisely as for the ordinary rag carpet.

Very likely some of our readers have seen this style of weaving the rugs and know how pretty they are. I am hurrying to get mine done. I think they are so pretty and very durable. I wish

I could have all the lady readers of the Household come and spend the day with me, and help cut and sew rags. What a jolly time we would have. I guess there would be more talking than sewing done.

ILKA.

ANOTHER WAY TO DESTROY ANTS.

Put a few cents' worth of corrosive sublimate in a bottle and pour water upon it. It will soon be ready for use, but as it is very poisonous care must be taken not to get it on the hands, and children should not be allowed to use articles upon which it is placed. If food can be kept on a table, or in a cupboard with legs, poison the legs for several inches from the floor by rubbing them thoroughly with a swab dipped in the solution. If a platform is under the cupboard, poison it entirely around. Keep the bottle carefully corked in a safe place and in a few weeks repeat the process if necessary. It is best to prepare the solution yourself as that which you buy is often too weak to be effectual.

After much experience I have never known it to fail.

HELEN S. NORTON.

WEIGHTS AND MEASURES.

Two cups granulated sugar make one pound.

A heaped pint of granulated sugar makes one pound.

A pint of coffee A sugar makes 12 ounces.

A heaping tablespoonful of sugar or salt makes one ounce. The same rule will apply to spices.

Two tablespoonfuls of liquid make one ounce.

Eight tablespoonfuls liquid make one gill.

One quart of flour makes one pound.

Of soft butter one quart makes one pound.

Ten ordinary sized eggs weigh one pound.

CONTRIBUTED RECIPES.

Old-fashioned Molasses Cake.—One-half cup sugar; one-half cup molasses; one-half cup melted butter; one-half cup sour milk; one teaspoonful soda; one-half teaspoonful cinnamon; one-teaspoonful cloves; one and two-thirds cup flour.

Coffee Cake.—Two cups brown sugar; one cup butter; one cup molasses; one cup cold coffee; four eggs; one teaspoonful soda; two teaspoonsful cinnamon; two teaspoonsful cloves; one pound raisins; one pound currants; four cups flour.

IRMA.

One of the most convenient articles of kitchen furniture which it has been the editor's privilege to see is combined in the "Queen Kitchen Cabinet," which has been advertised in our columns. It contains drawers and shelves for holding spices, sugar and other articles used in baking, besides ample room for flour. A broad molding board is so arranged that it can be drawn out for use and quickly pushed back again, a rolling cover of handsomely polished oak concealing it from view. The entire case is of oak, handsomely finished with brass trimmings, and mounted upon casters, making an attractive article of furniture. Any one who has to run into a cold store-room or pantry in winter after materials for baking and take numberless steps to and from the oven will appreciate this cabinet which can be placed conveniently near the stove where only a few steps are necessary during the entire operation.

It is made by the Queen Cabinet Co., 274 Monroe St., Chicago.

When writing advertisers mention Mich. Farmer



Inside of a Hundred Homes

Glimpses into one hundred of the daintiest furnished homes in America, showing what good taste can do with little money. See October LADIES' HOME JOURNAL

Other features: Stories by Mary E. Wilkins and Hamlin Garland; "Shams of the Modern Girl," by Ruth Ashmore; "A Chicago Girl in Europe," by Lilian Bell.

One Dollar a Year Ten Cents a Copy
The Curtis Publishing Company, Philadelphia

\$175.00 FREE
CASH PRIZES.

Will be Given for Correct Answers to the Following Question:

Where does the word "GRANDMOTHER" appear in the Bible?

FIRST CASH PRIZE—\$100.00 to five persons first sending correct answers.

SECOND CASH PRIZE—\$50.00 to next ten persons sending correct answers.

THIRD CASH PRIZE—\$25.00 to next twenty-five sending correct answers.

Should more than the required number send correct answers, the awards will be made according to date letter is received, hence it is advisable that your letter should be among the first. You can win one of these prizes if you are quick and use your brains.

The above rewards are given free and without consideration for the purpose of attracting attention to the competition. The competition is open to all readers of Ladies' Magazine, containing beautiful illustrations of the latest styles in Ladies', Misses' and Children's garments, special page on how to Decorate China, and other departments. Its present circulation exceeds 100,000 copies.

Our Conditions.—You must send with your answer 25 cents (stamps or silver) for a Six Months' Trial Subscription to THE HOME QUEEN.

Send to THE HOME QUEEN, Dept. 119 Station K., PHILADELPHIA, PA., sending 25 cents, whether answer is correct or not, will, in addition to a six months' subscription, receive by return mail a copy of "The Queen's Reveries," consisting of five choice pieces of music, which would cost you at retail \$1.25.

This competition closes October 20th. The correct answer, with names of winners, will be printed in the November issue. Any Mercantile Agency or Bank will tell you as to our reliability. Address

The Home Queen Publishing Co., Dept. 119 Station K., PHILADELPHIA, PA.

CATS. Illustrated circular of our Angoras with Long Hair and Big Tails. Great Pictures. WALNUT RIDGE FARMS, BOX 2144, BOSTON, MASS.

ONLY \$18
OR WITH
Michigan Farmer One Year Only \$19.



For Our New and Improved High-Arm

Michigan Farmer Sewing Machine.

WITH ALL LATEST ATTACHMENTS.

Warranted 10 Years. All freight paid by us

to all points east of the Mississippi River.

Self-setting needle; automatic bobbin winder, with oak or walnut woodwork; new bent wood top; seven long skeleton drawers. Full and complete set of attachments and illustrated instruction book sent with each machine. Every machine we send out guaranteed to be in every way equal to the best made in America and guaranteed to give entire satisfaction or money refunded. \$18 only, or \$19 with paper one year; cash must be sent with order.

If you want the best sewing machine made in the world at the lowest price ever offered, send us your order. Address

MICHIGAN FARMER, Detroit, Mich.



Legal Department.

CONDUCTED BY EARL D. BABST,
56 Moffat Building, Detroit.

MICHIGAN GAME LAWS.—II.

Sec. 24. In all prosecutions for a violation of any of the provisions of this act, the person or persons claiming the benefit of the last preceding section, must show affirmatively as a part of his defense on the examination or trial, that the animal or bird of which the dead body, or carcass, or skin, or any portion thereof is shown to have been in his possession during the time, when by law the killing thereof was unlawful, was killed at a time, in the manner, and for a purpose authorized by law, and that his possession at the time complained of was for one of the purposes authorized by said section, and it shall not be necessary for the prosecution to aver or prove that such possession was not for one of the purposes authorized by said section.

Sec. 25. In all prosecutions for a violation of any of the provisions of this act, proof of the possession of the dead body or carcass, or skin, or any portion thereof of any animal or bird mentioned or referred to in this act, at a time when the killing thereof was unlawful, shall be prima facie evidence that such animal or bird was killed at a time when the killing thereof was prohibited by law.

Sec. 26. All persons violating any of the provisions of this act, whether as principal, agent, servant or employee, shall be equally liable as principal, and any person or principal shall be liable for any violation of any of the provisions of this act by his agent, servant or employee, done under his direction.

Sec. 27. The State Game and Fish Warden is hereby authorized to issue permits to persons to capture or kill any kind of bird or animal mentioned or referred to in this act, at any time when satisfied that such person desires the same exclusively as specimens or for scientific or propagating purposes.

Such permits shall be in writing and shall state the kind and number to be taken and the manner of taking, and the purpose for which they are desired and the name of the person to whom issued and date of issue, and shall be signed by him. Such permits shall not be transferable and the holder thereof shall be liable to the penalties provided in this act if he violates any of its provisions.

Sec. 28. It shall be the duty of all prosecuting attorneys in this State to prosecute all offenses against the provisions of this act in their respective counties on being informed that its provisions have been violated; and it shall be the duty of all sheriffs, under sheriffs, constables and police officers to inform against and prosecute all persons whom there is probable cause to believe are guilty of violating any of the provisions of this act, within their respective jurisdictions.

Sec. 29. The injuring, destruction or killing of each animal and bird injured, captured, killed or destroyed contrary to the provisions of this act, shall be a separate offense, and the person so offending shall be liable to the penalties and punishments herein provided for each such offense.

F. J. W., Galloway P. O., Mich.—Please explain your question more in detail, particularly showing division of the sections into the school districts.

Sale on Streets of Detroit of Farm Produce.—C. W. L., Dearborn, Mich.—If a farmer goes on the market and pays 10 cents, can he sell the balance of load, if any, on the streets after the market closes?—Yes. The charge of 10 cents is for a stand on the market, but a farmer may sell the produce of his farm on the streets without a license. Bees and honey would come within the meaning of farm produce. We write you about disposition of church corporation.

Liability of Township for Injury Caused by Unrepaired Bridge—Absence of railings.—Subscriber, Sandstone, Mich.—Commissioner leaves stone at one end of a bridge, very near traveled way, intending to use them in repair of the bridge the following day. The next day a horse, nearly across the bridge, becomes frightened by the stone and backs off the bridge. There was a railing, but for several years it has not been safe to lean against it. Bridge is 60 feet long. Is township liable?

In our opinion the township is liable on the above facts. See Howell's statutes, sections 144d and following; also 104 Mich. 325.

Hunting on Enclosed Lands of Another Person—Penalty.—I. N. P., Brooklyn, Mich.—Of what is a man guilty in hunting on the premises of another? Is it necessary to post notices? What can be done with such hunters?—To hunt for game with firearms, dogs, or otherwise on the enclosed lands or premises of another without the permission of the owner or lessee is a misdemeanor. The penalty, on conviction, is a fine of not less than five nor more than twenty dollars, in the discretion of the court, and costs. And if the fine is not paid the defendant shall be confined in the county jail not less than five nor more than thirty days. The complaint, however, must be made by the owner or lessee. See Howell's statutes, 2221-222.

Partition Fences in Unincorporated Villages—Trespass of Animals.—M. G. H., Cass county, Mich.—1. What redress has a person against the owners of dogs and poultry for trespassing his lands?—A suit for damages. You may use such force as, under the circumstances, seems necessary to expel them. You cannot kill them. 2. A has built a new high picket fence on half of line between himself and neighbors, who haven't built. Can a compel the erection of these fences by law? I am told that one need not build any line fence if he doesn't see fit. Is this right?—Your neighbor can be compelled to erect fence upon division and assignment of the same by the fence viewers. Exterior fences need not be built, but partition fences between improved lands are required. 3. Do the same laws apply to fences in a town as in the country?—Councils in incorporated towns have the power to regulate the matter of fences by ordinance. The laws of the State apply to fences in unincorporated villages.

The Markets.

WHEAT.

The market has slumped badly the past week, aided by reports of increasing stocks and lighter exports. But it has begun advancing again, under more liberal orders from abroad. Receipts at northwestern points are heavy, showing that farmers are willing to accept current prices. It looks as if any strong advance would at once cut off foreign orders, and bring about another decline. The outlook, however, is promising for a strong market all the coming fall and winter. Foreigners have been buying freely and when they begin buying again because of short supplies values must advance.

The following table exhibits the daily closing sales of spot wheat in this market from September 10 to September 30, inclusive:

	No. 1.	No. 2.	No. 3.	White.	Red.	Red.
Sept. 10.....	98%	99%	97%			
" 11.....	96%	97	95			
" 13.....	93%	94%	92%			
" 14.....	94%	95%	93%			
" 15.....	94	95%	93%			
" 16.....	93	94%	93			
" 17.....	91%	93%	91%			
" 18.....	92	93%	91%			
" 20.....	92%	94%	92%			
" 21.....	92	93%	91%			
" 22.....	93	94%	92%			
" 23.....	92	94	92			
" 24.....	92%	94	92			
" 25.....	91%	93	91			
" 27.....	92%	94	91%			
" 28.....	91%	92%	90			
" 29.....	91%	91%	88%			
" 30.....	92%	93%	90			

The following is a record of the closing prices on the various deals in futures each day during the week:

	Sept.	Dec.
Friday	94	94%
Saturday	93%
Monday	94%
Tuesday	93%
Wednesday	92%
Thursday	94

The visible supply of wheat on Saturday last in the United States and Canada was 13,543,000 bu., as compared with 17,140,000 bu. the previous week, and 48,715,000 bu. at the corresponding date last year. The increase for the week was 2,403,000.

The official statement of the wheat product of France for this year, as made up from the reports to the French government by the prefects of the several departments, has been furnished the state department by United States Consul Bruyot, at St. Etienne. The product was 85,568,900 hectoliters (a hectoliter being two bushels and 3.35 pecks), against 119,742,412 in 1896 and 119,967,745 in 1895.

On July 1 the stock of old wheat in farmers' hands was reported at 30,000,000 bu. The Daily Trade Bulletin reported commercial stocks at 29,000,000 bu. With a crop estimate at 530,000,000 bu. this makes supply for the year of 649,000,000 bu. Consumption for twelve months will equal 325,000,000 bu.; seed requirements, 55,000,000 bu., leaving for exports and all stocks at the end of the grain year 269,000,000 bu. If the demand warrants it the stocks can be reduced again to the low figure shown this year on July 1, making it possible to export this season 200,000,000 bu. of wheat, a figure which current demand indicates will be fully required.—Chicago Times-Herald.

The Michigan weather bureau, in its last report says: "The weather condi-

tions during the past week have been generally unfavorable to the farmer. This is particularly so in regard to fall seeding. With hardly an exception there has been almost an entire absence of rainfall during the week in lower Michigan. Over most of the lower peninsula the soil is now very dry and dusty and fall seeding has been greatly delayed in consequence as farmers are waiting for rain. Besides delaying fall seeding the dry soil has prevented the proper germination of wheat and rye already sown."

Laws, the English statistician, estimates the British wheat crop at 50,664,000 bu. The area was 200,000 acres larger than last year and the crop 10,000,000 bu. less. The crop is one-quarter of the consumption.

The shipments of wheat from Argentina during the past thirty-five weeks have been 1,740,000 bu., against 16,708,000 bu. for the corresponding period in 1896.

The Buenos Ayres correspondent of the Liverpool Corn Trade News says the locusts only done slight damage in the north of Santa Fe, and crop prospects are still favorable.

Receipts of coarse grains were 12 cars of corn, 13 of oats and 15 of rye. Withdrawals were 1,701 bu. of corn and 2,981 bu. of oats. Stocks are 19,721 bu. of corn, 29,921 bu. of oats, 12,614 bu. of barley and 57,849 bu. of rye.

The Modern Miller says: "The demand for flour from the south was lighter this week on account of quarantine restrictions. Stocks are being reduced and will soon be exhausted unless heavy purchases are soon made."

DAIRY PRODUCTS.

BUTTER.

The butter market shows a steady improvement both in activity and prices. Choice creamery is especially strong at a big advance since a week ago. Quotations are as follows: Creamery, 20@21c; fancy dairy 14@15c; good dairy, 12@14c; low grades, 7@9c per lb. At Chicago values have also advanced, and on Thursday quotations in that market were as follows: Creameries, extras, 21@21c; firsts, 20@21c; seconds, 15@17c. Dairies, extras, 19@20c; seconds, 12@13c. Packing stock, fresh, 11c. The New York market has also advanced, and is generally firm, especially on the best grades. Quotations in that market on Thursday were as follows: Creamery, Western extras, per lb, 21@22c; do firsts, 19@20c; do thirds to seconds, 14@18c; do State, extras, 21@22c; do thirds to firsts, 14@20c; do June make, extras, 19@20c; do seconds to firsts, 16@18c; State dairy, half-firkin tubs, extras, 17@18c; do Welsh, tubs, fancy, 17@17c; State dairy, tins, etc., 11@15c; imitation creamery, fine, 14c; do seconds to firsts, 11@13c; factory, June extras, 12@13c; do seconds to firsts, 11@12c; do fresh, firsts, 12c; do seconds, 10@11c; low grades, 9@10c.

At Utica on Monday 11 packages of creamery sold at a range of 20@21c, the latter being paid for fancy 1-lb prints. Last week the range of prices was 19@21c.

At Little Falls on Monday 27 packages of farm dairy sold at 16@17c. Last week the range was 16@17c.

CHEESE.

There has been no change to note in this market since our last issue. Quotations for best full cream Michigan still range at 10@11c, with a quiet market, induced by weakness at eastern points. At Chicago the situation is unchanged, with prices at the same range as a week ago, except on two or three grades. Quotations in that market on Thursday were as follows: Young Americans, 8@8½c; twins, 7@8½c; cheddars, 7½@8½c; Swiss, 8½@9½c; Limburger, 6@8c; brick, 8@9½c. The New York market, while nominally unchanged, is not as strong as a week ago. Demand continues light, especially from the export trade, and it is difficult to secure outside figures. Quotations in that market on Thursday were as follows: State, full cream, large colored, fancy, 9@9½c; do large white, fancy, 9@9½c; do large, choice, 8½@8¾c; do large, fair, to good, 8½@9½c; do large, common, 7½@8c; do colored, small, fancy, 9½c; do white, small, fancy, 9½@9¾c; do small, choice, 8½@9c; do small, common to good, 7½@8½c; State light skims, small, choice, 7½@8½c; do large, choice, 6½@7½c; do large, choice, 6½@6½c; do good to prime, 5@5½c; do common to fair, 4@4½c; State, full skims, 3@3½c.

At Utica Board on Monday 7,518 boxes were sold at 8@9½c; the previous week 8,387 boxes were sold at a range of 8@9½c, and on the same day a year ago 5,130 boxes were sold at an average price of 8@9½c.

At Little Falls on Monday 6,462 boxes were sold at a range of 8½@8¾c. The previous week 5,434 boxes were sold at a range of 8½@8¾c.

At Liverpool on Thursday the finest white and colored American cheese sold at 45c per cwt., the same price as quoted a week ago.

WOOL.

The eastern markets are unusually active and firm. At Boston the past week sales footed up a total of over 13,000 lbs. It was generally expected the large purchases by manufacturers early in the year would make a rather slow market, but it is evident the demand for goods is so active as to deplete stocks more rapidly than anticipated. Prices as yet show but little change, but the trend of values is upwards. Michigan XX is quoted in Boston at 26c; No. 1 Michigan combing, 26@27c; No. 2 Michigan, 26c; Santos, 24c; Mocha, roasted, 29c; Java, 29c.

OILS.—Raw linseed, 33c; boiled linseed, 40c per gal, less 1c for cash in ten days; extra lard oil, 48c; No 1 lard oil, 35c; winter white kerosene, 8½c; fancy grade, 11½c; deodorized stove gasoline, 7½c; turpentine, 37c per gal in bbl lots; in less quantities, 40@42c per gal.

COFFEE.—City prices are as follows: Rio, roasting, 15c; fair, 16c; good, 18@19c; prime, 20c; choice, 22@23c; fancy, 24c; Maracaibo, roasted, 25c; Santos, roasted, 24c; Mocha, roasted, 29c; Java, 29c.

OILS.—Raw linseed, 33c; boiled linseed, 40c per gal, less 1c for cash in ten days; extra lard oil, 48c; No 1 lard oil, 35c; winter white kerosene, 8½c; fancy grade, 11½c; deodorized stove gasoline, 7½c; turpentine, 37c per gal in bbl lots; in less quantities, 40@42c per gal.

HARDWARE.—Latest quotations are as follows: Wire nails, \$1.70; steel cut nails, \$1.60 per cwt; new card, single bit, bronze, \$5; double bit, bronze, \$8.50; single bit, solid steel, \$6; double bit, solid steel, \$9.50 per doz; bar iron, \$1.40; carriage bolts, 75 per cent off list; tire bolts, 70 and 75 per cent off list; painted barbed wire, \$1.70; galvanized do, \$2 per cwt; single and double strength glass, 60 and 20 per cent off list; sheet iron, No. 24, \$2.50 per cwt; galvanized, 75 and 10 per cent off list; No 1 annealed wire, \$1.50 rates.

HAY.—Baled quoted as follows: Best new timothy in car lots, \$8.50; rye straw, \$5.50; wheat and oat straw, \$4.50 per ton.

HIDES.—Quoted as follows: No 1 green, 7c;

No 2 cured, 9c; No 2 green, 6c; No 2

cured, 8c; No 1 cured calf, 10@11c; No 2

cured calf, 9@9½c; No 1 green calf, 9c; No 2 green calf, 7½c per lb; sheepskins, as to

wool, 50@75c; shearlings, 20@25c.

WOOL.—Quoted as follows: Unwashed fine, 15@16c; unwashed medium, 19@20c; washed fine, 19@20c; washed medium, 23@24c per lb.

day last, with a large attendance of buyers, but very few from the United States. Sales showed an advance of 50@52c per cent over the prices realized at the last series. This is the result of the shortage in the Australian clip from the severe side of the Atlantic, as it raises the point at which importations can be made.

A private letter from A. A. Wood, of Saline, announces that he has sold his about 20,000 lbs., in which were two of his own clips, the balance purchased at 7@8c per lb. He realized 15c straight on the fine, and 20c on the coarse, which is equal to the best Detroit prices. We look for very firm markets for wool during the balance of the clip year.

DETROIT PRODUCE MARKET.

Detroit, September 30, 1897.

FLOUR—Quotations on jobbers lots in barrels are as follows:

Straights	\$5.00
Patent Michigan	5.50
Low grade	4.00
Rye	3.50

CORN.—The visible supply of this grain on Saturday last in the United States and Canada was 35,597,000 bu., as compared with 33,737,000 the previous week, and 13,218,000 at the corresponding date in 1896. Quotations in this market are as follows: No 2, 30@31c; No 3, 30c; No 2 yellow, 31½c; No 1 yellow, 31½c.

OATS.—The visible supply of this grain in the United States and Canada on Saturday last was 10,850,000 bu., as compared with 10,753,000 bu. the previous week, and 8,955,000 at the corresponding date in 1896. Quotations are as follows: No 2 white, 23c; No 3 white, 23c; light mixed, 23c.

RYE.—The visible supply of this grain on Saturday last in the United States and Canada was 2,537,000 bu., as compared with 2,425,000 bu. the previous week, and 1,967,000 at the corresponding date in 1896. Quotations in this market are as follows: No 2, 47@47½c per bu; No 3, 45c.

BARLEY.—The visible supply of this grain on Saturday last in the United States and Canada was 1,644,000

DETROIT LIVE STOCK MARKET.

Michigan Central Stock Yards.

Detroit, Mich., Sept. 30, 1897.
CATTLE.

Receipts Thursday, 951 head; through and direct to butchers, 501; on sale, 450; as compared with 426 one week ago. There is no change to note in quality; bulk of receipts mostly common. Market fairly active and steady for good hand butchers, common closed slow and 10@15c lower. \$4.50 was highest price to-day for 4 good butcher steers av 1,632 lbs., and \$4.15 for 3 av 916 lbs., but the bulk changed hands at prices ranging from \$3.00@3.75; coarse cows and common butchers, \$2.50@3.00; bulls, fair to good butchers, \$2.50@3.00; stockers and feeders slow at \$3.00@3.85. Veal calves.—Receipts, 114; one week ago, 96; active at \$5.50@6.70 per 100 lbs. Milk cows and springers steady; sales ranged from \$3.00 to \$5.00 each.

Pierson sold Sullivan 14 steers av 857 at \$3.75 and 2 steers at \$3.50.

Baker sold same 14 steers and heifers av 773 at \$3.60.

Weitzel sold Kammen 7 mixed butchers av 800 at \$3.25 and a bull weighing 600 at \$2.75, 6 stockers to Sullivan av 690 at \$3.50 and a bull weighing 880 at \$2.60.

Estey sold Caplis & Co 3 good butcher steers av 916 at \$4.15; a bull to Sullivan weighing 1,130 at \$2.80 and 2 fat cows to Black av 1,490 at \$3.65.

Gordon sold Marx 4 light butchers av 592 at \$3.35, 4 steers to Caplis & Co av 1,082 at \$4.00 and a bull weighing 1,210 at \$3.

Haley sold Kammen 9 mixed butchers av 660 at \$3.45, 2 fat cows av 960 at \$3.00 and a common do weighing 840 at \$2.50.

E N Sweet sold Berden 10 stockers av 532 at \$3.45.

Ackley sold Black 4 fat heifers av 225 at \$3.75, 4 steers av 860 at \$3.75 and a cow weighing 1,340 at \$2.50.

Haley sold Howard 11 stockers av 607 at \$3.60, 4 mixed to Sullivan av 475 at \$2.15 and a steer to Black weighing 1,020 at \$1.25.

Thorburn sold Black 8 fair butcher cows av 1,008 at \$2.80 and a steer to Sullivan weighing 820 at \$3.85.

Clark & B sold Schleicher 5 mixed butchers av 650 at \$3.50 and 2 fat cows av 940 at \$3.15.

Adams sold same 4 mixed butchers av 765 at \$3.60.

E N Sweet sold Austen 7 stockers av 614 at \$3.45, 3 mixed to Mich Beef Co av 540 at \$3.25 and 4 do av 572 at \$3.00.

Roe & Holmes sold Robinson 4 (cows and bulls) av 1,300 at \$3.00 and 2 cows av 1,125 at \$2.75.

Hogan sold Marx 7 mixed butchers av 830 at \$3.35.

Pierson sold Mich Beef Co 4 heifers av 720 at \$3.50.

Vanbuskirk & L sold Sullivan 5 stockers av 700 at \$3.50 and 4 mixed butchers to Black av 830 at \$3.25.

Horne sold Sullivan 3 coarse steers av 1,140 at \$3.85.

Seelye sold Fitzpatrick 2 cows av 1,000 at \$3.00, a canner weighing 950 at \$2.00, 5 mixed butchers av 844 at \$3.50 and 3 do av 660 at \$3.50.

Spicer & M sold Cook & Fry 2 cows av 1,035 at \$3.00, 2 do av 910 at \$2.75 and 4 mixed butchers av 595 at \$3.25.

Glen sold Howard 8 stockers av 597 at \$3.50, 9 mixed butchers to Caplis & Co av 606 at \$3.30 and 6 fat cows av 1,031 at \$3.00.

Sharp sold Caplis & Co 4 good sausage bulls av 1,090 at \$2.90.

Adams sold Howard 2 steers av 760 at \$3.75 and one weighing 670 at \$3.75.

Roe & Holmes sold Robinson 18 mixed butchers av 772 at \$3.75 and 5 cows av 1,060 at \$3.00.

Clark & B sold Howard 3 stockers av 716 at \$3.60 and a bull weighing 500 at \$3.00.

Lamareaux sold Moore 2 bulls av 885 at \$3.25, 4 fat heifers to Mich Beef Co av 710 at \$3.75 and 2 cows av 1,230 at \$3.00.

E N Sweet sold same 5 common butchers av 1,086 at \$2.50 and 2 bulls to Clancy av 565 at \$2.60.

H Lee self Marx 2 mixed av 910 at \$2.60, 26 steers and heifers to Sullivan av 850 at \$3.75 and a stag weighing 780 at \$3.00.

Dennis sold Caplis & Co 8 cows av 1,020 at \$3.00 and 10 mixed butchers av 760 at \$3.60.

Robb sold June 2 bulls av 860 at \$2.75, 13 steers and heifers to Sullivan av 890 at \$3.85; 4 good steers av 1,032 at \$4.50, 2 cows av 1,190 at \$3.00 and a canner weighing 1,130 at \$2.00.

Allen sold Sullivan 3 bulls av 710 at \$2.50 and 24 mixed stockers av 643 at \$3.40.

Spicer & M sold Cook & Fry 9 mixed butchers av 643 at \$3.25, 3 do av 646 at \$3.25, a cow weighing 880 at \$3.00 and a bull weighing 830 at \$2.50.

Stead sold Mason 3 heifers av 760 at \$3.50 and 2 cows av 1,065 at \$2.60.

Horne sold same 2 heifers av 765 at \$3.75 and 3 cows to Black av 1,000 at \$3.00.

SHEEP AND LAMBS.

Receipts Thursday, 2,424; one week ago, 1,607. There is no change to note in quality; market quiet; good handy butchers sold at about last week's prices. Lambs slow and 10 to 15 lower. Range of prices: Good lambs, \$4.35 to \$5.10; light to good, \$4.50@4.75; yearlings and good mixed lots, \$4.30 to \$4.75; fair to good mixed butchers, \$3.25 to \$4.25; common to fair, \$2.50 to \$3.15, closing dull with several loads shipped through in first hands. Note.—The drought in New York state is hurting the lamb trade here, as it keeps New York buyers out of the market.

Haley sold Hiser 26 most lambs av 60 at \$4.60.

Spicer & M sold Monaghan 106 most lambs av 72 at \$4.60.

Roe & Holmes sold Mich Beef Co 36 mixed butchers av 74 at \$4.00.

Dillon sold Robinson 30 lambs av 72 at \$4.90.

Horne sold McIntyre 12 lambs av 67 at \$4.10.

Taggert sold Monaghan 24 mixed butchers av 70 at \$3.60.

Gordon sold Holmes 10 lambs av 84 at \$4.75.

Sharp sold same 26 mixed av 71 at \$3.75.

Roe & Holmes sold Fitzpatrick 82 mixed av 79 at \$3.60.

Glen sold Holmes 34 common av 85 at \$2.95 and 58 lambs to Mich Beef Co av 53 at \$4.50.

Pierson sold Fitzpatrick 59 lambs av 70 at \$5.00 and 20 mixed av 66 at \$4.00.

Ackley sold Mich Beef Co 17 lambs av 69 at \$5.00.

Hawley sold Hiser 49 mixed av 65 at \$3.25.

Willis sold Fitzpatrick 33 lambs av 72 at \$4.90.

Roe & Holmes sold Robinson 85 common butchers av 59 at \$3.00.

Alien sold Hammond, S & Co 26 most lambs av 85 at \$4.50.

Roe & Holmes sold Young 23 lambs av 73 at \$5.00.

Smith sold Hiser 43 lambs av 63 at \$4.50.

Haley sold Hammond, S & Co 80 lambs av 74 at \$4.82½.

Sweet sold Mich Beef Co 91 most lambs av 75 at \$4.75.

HOGS.

Receipts Thursday, 3,354; direct to packers, 848; on sale, 2,506, as compared with 2,329 one week ago. Market opened slow and lower; a few early sales brought \$4.25, but sales ranged mostly from \$4.15@4.22½, closing slow and 5@10 below prices paid last Friday. Several loads shipped through in first hands. Pigs, \$4.20@4.35; roughs, \$3.25@3.50; stags, 1-3 off.

Roe & Holmes sold Sullivan 70 av 149 and 47 av 163 at \$4.22½.

Wright & York sold same 92 av 147 and 111 av 164 at \$4.22½.

Thorburn sold same 34 av 195 at \$4.22½.

Adams sold same 51 av 171 at \$4.20.

Pierson sold same 20 av 173 at \$4.20.

Sharp sold same 56 av 185 at \$4.20.

Roe & Holmes sold same 89 av 185 and 25 av 164 at \$4.20.

Baker sold same 34 av 179 at \$4.22½.

Clark & B sold R S Webb 60 av 189 at \$4.25.

Glenn sold same 55 av 207 at \$4.20.

Dillon sold same 44 av 202 at \$4.25.

Lamareaux sold same 39 av 217 at \$4.25.

Messmore sold same 61 av 192 at \$4.20.

Rook sold same 29 av 155 at \$4.25.

Smith sold same 37 av 162 at \$4.20.

Thompson sold same 49 av 195 at \$4.25.

Vanbuskirk sold Hammond, S & Co 103 av 156 at \$4.20.

Brooks & P sold same 72 av 188 at \$4.20.

Horne sold same 46 av 165 at \$4.20.

McHugh sold same 85 av 219 at \$4.20.

Osmus sold same 12 av 229 at \$4.20.

Robb sold same 63 av 218 at \$4.22½.

Hawley sold same 44 av 196 at \$4.20.

Ackley sold Parker, Webb & Co 39 av 208 at \$4.15.

Henderson sold same 56 av 216 at \$4.15.

Hogan sold same 42 av 208 at \$4.15.

Taggart sold same 128 av 205 at \$4.20.

McDonald sold same 10 av 174 at \$4.20.

Sheldon sold same 51 av 200 at \$4.17½.

Haley sold same 80 av 205 at \$4.15.

Haley sold same 25 av 200 at \$4.15.

Bandfield sold same 75 av 211 at \$4.15.

Hogan sold Kenner 12 pigs av 101 at \$4.25.

OUR BUFFALO LETTER.

East Buffalo, Sept. 30, 1897.

Cattle.—Receipts of cattle on Monday last were 5,280, as compared with 6,116 the same day the previous week, and shipments were 3,520, as compared with 4,906 for the same day the previous week. The market opened fairly active on Monday with lighter receipts. Heavy steers were dull, while good butchers' stock such as handy weight steers, fat cows and heifers, and good bulls were higher. Stockers and feeders were generally lower, except for the choicest. Since Monday no change has taken place in values except that heavy steers, and this includes all over 1,250 lbs., have ruled weak owing to the absence of any demand. Exporters are not in the market to any extent, and such steers are too heavy for butchers. Veal calves rule steady at an advance. Quotations in that market on Thursday were as follows: Export and Shipping Steers.—Prime to extra choice finished steers, \$1.25 to 1,400 lbs., \$5.00@5.20; prime to choice steers, 1,200 to 1,400 lbs., \$4.90@5.00; good to choice fat smooth steers, 1,100 to 1,200 lbs., \$4.65@4.75; green, coarse and rough fat steers, 1,000 to 1,300 lbs., \$3.75@4.40. Butchers Native Cattle.—Fat smooth dry fed steers, 1,050 to 1,150 lbs., \$4.80@4.75; fat smooth dry fed light steers, 900 to 1,000 lbs., \$4.35@4.60; green steers thin to half fattened, 1,000 to 1,400 lbs., \$3.75@4.35; fair to good steers, 900 to 1,000 lbs., \$3.90@4.30; choice smooth fat heifers, \$4.25@4.60; fair to good fat heifers, \$3.65@4.10; light thin half fat heifers, \$3.25@3.50; fair to good mixed butchers' stock, \$3.40@4.25; good smooth well-fattened butcher cows, \$3.75@4.10; fair to good butcher cows, \$3.00@3.50; common old shelly cows, \$2.00@2.90. Native Stockers, Feeders, Bulls and Oxen.—Feeding steers, good style, weight and quality, \$3.65@4.10; feeding steers common to only fair, \$3.25@3.50; good quality yearling stock steers, \$3.70@4.10; stock heifers common to choice, \$2.90@3.40; export weight bulls, fat and smooth, \$3.75@4.00; good fat smooth butchers' bulls, \$3.40@3.60; fair to good sausage bulls, \$2.65@3.10; thin, old and common bulls, \$2.50@2.60; stock bulls, \$2.50@3.00; fat smooth young oxen, to good lots fit for export, \$4.35@4.60; fair to fairly good partly fattened young oxen, \$3.75@4.25; old common and poor oxen, \$2.25@3.50. Milkers and Springers.—Milkers strictly fancy, \$4.00@5.20; milkers good to choice, \$3.80@4.50; milkers fair to poor, \$1.80@2.50; springers strictly fancy, \$4.50@5.00; springers fair to good, \$3.20@4.00; common milkers and springers, \$1.40@2.80. Veal Calves.—Veal choice to extra, \$7.50@7.75; veal calves common to fair, \$5.50@6.50; heavy feed ad buttermilk calves as to quality, \$3.50@5.50.

On Thursday the market for cattle was quiet and steady.

Sheep and Lambs.—Receipts last week were 90,931, as compared with 86,924 for the previous week, and 99,863 for the corresponding week in 1896. Up to and including Wednesday of this week receipts have been 46,045 head, as compared with 33,814 for the same days last week. On Monday business was fairly active and strong, as at good prices on choice steers as at any time the past week. Receipts were nearly 9,000 larger than the previous Monday. Veal calves were at the same range as a week ago. Prime steers sold at \$5.15@5.40; fair to good \$4.75@5.00; common to ordinary, \$3.90@4.10; heifers, \$3.85@4.40; cows, \$2.00@2.90; bulls, \$2.50@3.50; veal calves, \$4.75@6.90. Since Monday receipts have kept increasing, and generally the surplus is of thin grass range steers. Good native steers are scarce and steady. On Wednesday top natives sold at \$5, \$5.10, \$5.35, and \$5.45, showing as strong prices as any day this week or last. Cattle slightly below prime sold at \$4.95, against \$4.80@4.85 for a similar lot Tuesday. Range grass cattle rather slow, and prices weak to a trifle lower. Top quality of feeders and stockers 10c lower than last week. Veal calves steady. Milkers and springers, \$2.50@3.00.

On Thursday receipts of cattle estimated at 12,000; market steady at Wednesday's prices.

Sheep and Lambs.—Receipts last week were 90,931, as compared with 86,924 for the previous week, and 99,863 for the corresponding week in 1896. Up to and including Wednesday of this week receipts have been 46,045 head, as compared with 33,814 for the same days last week. Business opened active on Monday, and values were steady on the best mutton sheep and lambs. Some of the low-grade sorts sold lower and were slow from first to last.

Culis and common stock, \$3.75@3.90; prime market mutton sheep, \$4.25@4.85; prime market lambs, \$5.25@5.85—none of the latter sort here to-day; big bands of westerners sold at \$5.10@5.30. Since Monday trade has been fairly active, with prices a trifle lower, showing a decline this week of 10@20c up to Wednesday's close. On Wednesday good mutton sheep sold at \$3.70@3.90, a few native yearlings at \$4@4.25. Prime feeding sheep, \$5@5.10, and the best western feeding lambs, \$4.60@4.65. Top natives, \$4.75@5; common, \$3.75@4.25.

Receipts of sheep on Thursday estimated at 15,000; market reported slow and weak.

Hogs.—The receipts of hogs last week were 146,825, as compared with 120,911 the previous week, and 153,225 for the corresponding week in 1896. Up to and including Wednesday of this week receipts have been 79,770, as compared with 76,604 for the same days last week. With increased receipts and slow buying on Monday there was a decline of 5@10c per hundred on all classes of hogs, which gave the lowest range of prices for a month. Shippers were active buyers at the decline and the general market closed barely steady, with a large number of heavy packers carried over. Rough packers sold down to \$2.60; the ordinary run of packers sold down to \$3.70; something a little better than the ordinary, \$3.75@3.90; prime medium and butcher weights, \$4.05@4.20; prime light, \$4.20@4.30. Since Monday business has ruled fairly active and values steady. On Wednesday light sorts were steady. Roughs and common packers sold at \$3.50@3.60; prime heavy packers, \$3.80@3.95; prime medium and butcher weights, \$4@4.25, largely around \$4.15; prime light, \$4.25@4.30.

Receipts of hogs on Thursday estimated at 25,000;

Horticultural.

From our Special English Correspondent.
HOW TO PLANT TREES AND SHRUBS.

The importance of planting trees and shrubs properly is frequently underestimated. Ultimate success or failure often depends upon the method adopted at the first. It is not only necessary that the land to be planted should be properly prepared and drained, but the trees must be treated as things of life, to be subjected to rational means of healthy development.

In procuring trees from a nursery see that they are provided with a sufficiency of good fibrous roots, for it is from the spongiolites at the extremities of these that the tree derives its nourishment. Some soils cause trees to produce much more fibrous roots than others, and trees vary very much in the form of their roots, independently of the soil or conditions they are grown under. Pears and quinces emit long tap-roots generally, and this is especially the case if allowed to remain in the same position any length of time. The winter majetin apple produces but few fibres, while the Northern Spy, which is now almost universally used as a stock upon which to graft, sends out a mass of small roots which render it more valuable than other kinds.

Azaleas, rhododendrons, and heaths produce dense masses of fibres quite close to the stem of the plant, and this renders them easy to transplant. The tap-roots of trees send out fibres, and it is these chiefly which should be protected from damage. It is difficult to lift trees from stiff, heavy soils without some of the roots being fractured; it is therefore necessary that every tree should be examined before being re-planted, and wherever a main root has been mutilated, it should be pruned with a keen knife. Even where the roots have been lifted entire, it may be better to cut a little off the points, so that a growth of small fibres may be accelerated. On no account should the fine hair-like rootlets be touched.

Some experienced planters make a point of throwing out the holes some time before planting, so that the soil may be exposed to the influence of the atmosphere, rain, etc.; but this method is not always a prudent one. Heavy rains may come, and the holes fill with water; a long delay may then ensue, as trees should not be planted when the ground is in a state of puddle.

The best time for planting is in cloudy, quiet weather, and also hot sunshine should be avoided as much as possible. On no account should the roots be exposed to the sun. Should unfavorable weather occur at the time of the trees or shrubs arriving from the nurseryman, the bundles or cases may be unpacked and their contents kept for a little in a dark, cool shed with the roots covered up and occasionally moistened, or a trench may be thrown out in some sheltered corner, and, if possible, near to the ground to be planted, the trees to be placed therein and to be watered overhead should very dry weather follow.

On no account should the roots of a tree be cramped in a small hole, each root should be spread out carefully; the ill-effects of planting trees in small holes while the surrounding soil is hard and impermeable may be frequently seen.

Conifers and shrubs grown in pots often have their roots "corkscrewed," and unless these twisted roots are uncoiled and well separated, the plant will never do any good.

Deep-planting is to be deprecated, the tree should not be planted any deeper than it has been growing. This can always be known by the mark left by the earth. A little allowance, say an inch, may be made for the settling down of the soil. What gardeners call the collar of the plant is that spot where the ascending axis, or the stem, meets the descending axis, the root.

When the plant is placed in position, and the roots well spread out, some tolerably fine soil should be shaken in among the roots; where the natural soil is rough or very poor a little better soil should be brought from elsewhere, but manure should not be used for this purpose. When the hole has been filled, the soil should be well firmed by the feet before the surface is levelled and made neat. If the trees have to be staked, it is better to fix

the support in the soil before planting; if done after the trees are in, the roots are liable to be injured.

Avoid planting, if possible, when the ground is very dry or very wet, better the former than the latter. If water has to be used when the soil is very dry, it must be used abundantly, for it takes a lot of water to percolate soil which is very dry and dusty.

As a rule, trees should never be planted on mounds. In very wet positions it may be necessary to slightly elevate them, but in a country such as this, subject to long periods of drought, it is better to have the tree in a slight depression, so that the rain or any artificial watering will not so readily run from the tree, but be inclined towards it. While the addition of manure to land to be planted with fruit trees is scarcely ever necessary, it should never be brought in direct contact with the roots.

Trees frequently do well in stony soils, and the removal of stones does not seem to be always advantageous to plant growth; it has been found that trees thrive better in land where there was a considerable quantity of stones than in adjacent land from which the stones had been removed. Where there is little or no lime in the soil, old plaster and mortar rubble may be used with advantage in land in which stone fruits are to be planted.

Broken-up bones from the kitchen may be placed under the roots of fruit trees. They help to keep the soil open and porous, and as they dissolve afford a considerable amount of nutrition. If near a fellmongery, the hair, ashes, lime, and other refuse may be used with advantage; the smaller roots soon find out the bits of hair, etc., which form congenial food for the tree.

Trees and plants of all kinds, except any absolutely tender ones, should be planted as early in the autumn as possible. Immediately the foliage begins to turn yellow, the tree may be removed. In dry seasons, such as the present, the ground is frequently so hard that it is difficult in some soils to lift the trees without injuring the roots; it is therefore necessary to wait until sufficient rain has fallen to soften the ground.

THAYER'S BERRY BULLETIN FOR OCTOBER.

The condition of the berry plant at the close of the growing season is a certain indication of the product the following year.

Let us examine: Is the foliage free from rust and blight? Is the cane mature and well ripened? Is it stocky and well supplied with strong vigorous buds? Is it free from spot, speck and blemish? Are the roots light, fibrous and strong? Is the pith, the vital or essential part of the plant, bright and firm?

If so, we are assured that with a fair season and proper winter protection, a full crop may be expected.

In many localities I fear berry canes, now so promising, are greatly injured by early spring frosts, severely freezing the young shoots when but a few inches high.

This injury is observed only in the pith, the life marrow being dark and shrivelled, a few inches above the ground. The cane above and below showing a fine vigorous growth.

Canes so affected are almost certain to mature no fruit the coming season. Examine them closely.

In any event it is important to save all good canes by most thorough winter protection. This is best done by bending bushes to the ground and covering with fresh earth.

The process has been described many times, but needs to be repeated again.

It should be understood that the roots of plants are very flexible and may be turned and doubled in any direction.

Now in laying bushes down for winter the bending must be in the root, and below the surface of the ground. It is not at all difficult but simply requires a little care and practice.

This method of protection is given at an expense of seven or eight dollars per acre. There is no doubt what-ever as to the great advantage of such protection, and it should be practiced in all latitudes where the thermometer ever reaches 10 degrees below zero. Never attempt to grow berries in northern climates without winter protection.

It may be done any time after frosts and before the ground freezes. Select a time when there is no frost in

ground or bush, remove two or three inches of dirt from base of hill, gather the canes in close form, with a wide fork or well protected hands, and bend gently in direction to be laid, while second party inserts fork near opposite base or with foot pressed firmly against the hill, it is forced to the ground bending only in the root and covered with dirt, the top of succeeding hill resting along the side of preceding hill.

COLD STORAGE FOR FRUITS.

The great interest taken by fruit growers in the question of cold storage for the preservation of fruits for late markets, will make the following report from George T. Powell, which appeared in the *Rural New Yorker*, of value, as pointing out the strong and weak points of the system now in use when tested in a practical manner:

The past season, on the whole, has been a disastrous one to cold storage holders. My own crop of pears came out in excellent condition, and sold well, averaging fully 60 per cent advance by holding about 40 days. Many other pears taken out of the same building were a total loss, because not taken from the trees soon enough. The ammonia and brine or chemical process was used to cool the air, and for pears was kept at 34 degrees. For apples, 33 degrees is desirable, and this temperature can be kept uniform only by the chemical process. Where ice-houses are used, there is, at least, 50 per cent more loss, for the same low, even temperature cannot be maintained. Apples have not kept as well as usual the past season. The entire crop matured too early.

Large quantities of Eastern apples were sent to Kansas City and stored, as the houses were comparatively empty, the crop of Missouri being light; but prices even dropped instead of advancing when the fruit had come out, and many lost heavily. Russets and Baldwins were selling at Atlanta and other southern markets early in May for \$210 to \$225 per car, which does not leave a satisfactory result for the time of the year. In Cleveland, the first week in May, common sound apples sold for 90 cents to \$1.10 per barrel, while the best quality brought but \$1.50 per barrel. In New York, Philadelphia and Baltimore, some really fine selections have brought \$3 to \$3.50 per barrel, but such sales are rather limited in extent.

An attempt has been made the past winter to hold oranges in cold storage, but results have not been satisfactory. They have come out in poor condition, and have sold for less than when they first reached the market. The cold storage system is all right, but there has been many circumstances that have made the past year an exceptional one in the production of losses. Apples have been introduced where they have never before been used in quantity, and the low prices and wide distribution will make a largely increased demand for this fruit in the future, and this can be met only by the cold storage system. It can safely be said that there has been more money lost than made on cold storage fruit, especially on apples, the past year; but the losses will more than be made up in the future from the wider distribution and greater demand following from the present low prices.

NEW BORDEAUX MIXTURE.

At the recent meeting of agricultural scientists, Mr. Swingle described a new method of preparing Bordeaux mixture, which we give herewith:

Where Bordeaux mixture is used on an extensive scale it pays to prepare stock solutions of both the copper sulphate and the lime. The stock solution of copper sulphate is prepared by dissolving in a barrel holding 50 gallons of water, 100 pounds of the blue-stone. The latter is dissolved by suspending it in a sack just beneath the surface of the liquid. The usual plan is to put into the barrel 50 gallons of water and then mark the point where the liquid stands. About one-third of the water is then poured out, and the 50 pounds of copper sulphate, which has been previously tied in a coarse gunny sack, is suspended over the edge of the barrel and allowed to

reach just beneath the surface of the liquid.

When all the copper sulphate is dissolved, the empty bag is taken out, and a sufficient quantity of pure water is added to bring the solution in the barrel up to the 50 gallon mark again. It will be seen that every gallon of the liquid contains about two pounds of copper sulphate in solution. This stock solution is set away in a convenient place, and when wanted is drawn from the barrel through a wooden spigot at the bottom.

The stock lime preparation is made in much the same way. Fifty pounds of lime are placed in a barrel and then slaked in the usual fashion. When slaked, sufficient water is added to bring the whole mass up to a previously determined 50 gallon mark. The stock lime is also stored in some convenient place, but it is best to arrange to remove what is wanted from the top of the barrel rather than attempt to draw it off through a spigot.

To prepare Bordeaux mixture it is necessary to take a certain number of gallons of the copper sulphate solution and a certain number of the lime solution and mix them in some suitable vessel. Mr. Swingle finds that the more concentrated the two preparations are when poured together the less satisfactory will be the resulting mixture. Bordeaux mixture, when made from such concentrated preparations, is likely to be flaky and granular and will very soon settle. He recommends, therefore, that in making the mixture both the lime and the copper sulphate solution should be greatly diluted before bringing them together. Mr. Swingle would prepare what we ordinarily call the 50 gallon Bordeaux mixture, as follows: Dilute three gallons of the stock solution of copper sulphate with water to 25 or 25 gallons. In another vessel pour two gallons of the stock lime preparation and dilute this with about 15 gallons of water. Pour the copper sulphate solution and the lime preparation slowly together, and then stir thoroughly for two or three minutes with a long handled, broad-bladed wooden paddle. It will be seen that this mixture contains six pounds of copper sulphate and four pounds of lime.

Mr. Swingle suggests a simple method, which, if used when the first barrel of Bordeaux mixture is made up, would answer until the stock copper sulphate solution and the stock lime are exhausted. Of course, when a new supply of the stock preparation is made up it will be necessary again to test the first barrel of the mixture. All that is required to make the test is an ordinary penknife and a piece of emery paper. The knife blade is inserted for a couple of minutes in the mixture, and if there is any free copper present it will show as a thin film on the steel blade of the knife. If there is no free copper present, the knife blade will not be tarnished. If the knife blade shows the presence of copper, it is only necessary to add a small quantity of lime. The emery paper is used simply to remove the copper film from the knife blade. Half a minute's polishing with the paper will put the blade in condition for another test.

WHEN WRITING TO ADVERTISERS PLEASE MENTION THAT YOU SAW THEIR ADVERTISEMENT IN THE MICHIGAN FARMER.

MONEY IN HONEY!

The Weekly American Bee Journal Tells all about it. Sample Copy Mailed Free G. W. YORK & CO. 118 Michigan St., CHICAGO, ILL.

Grape Vines Small Fruits Old and New Varieties.

Extra fine stock of Currants, including the new and unrivaled WILDER. Lowest rates. Quality *extra*. Warranted true. T. S. HUBBARD CO., Fredonia, N.Y.

FITZGERALD PEACH
The finest quality yellow peach in existence; ripening with Crawford. A sure bearer. Columbian White and Donald's Elmira. Also many new varieties of fruit. Standard varieties of Strawberry plants. Japan Plums. Miller Red Raspberry. Over 1,000,000 peach trees. Catalog free. HARRISON'S NURSERIES, Fredonia, N.Y.

CAMPBELL'S EARLY Seeds Need Not Be Swallowed.
"First of all Grapes," says *Rural New Yorker*. Scaled 96 points in possible 100. "Will ship round the world." Early or Late. Insist on our Seals and get what you buy. Largest stock of other Grape Vines, Small Fruits. Elegant Catalogue FREE. GEORGE S. JOSELYN, FREDONIA, NEW YORK.

The Poultry Yard.

For The Michigan Farmer.
LEGHORN VS. LEGHORN.

It is one of the traits of human nature for a person to believe that what he has got and what he is directly concerned and interested in is always equal to, if not a little better than that of some one else. This trait of character is more or less common to all; but in some instances it is decidedly developed. Such a state of affairs is not entirely wanting in the Fancy. In many instances, as elsewhere, it is founded on fact; possibly quite as many have no other grounds than a fertile imagination.

Doubtless, no other condition calls for such an extensive development along this line as when a "boom" is on. A "boom" as defined by Webster is "To make a hollow sound or roar"; hence, having neither pith nor essence, anything coming under this head is allowable. At any rate, this seems to be the general assumption of any one who has something which he wishes to be "boomed." As to the right or wrong of such a course each one must to a great extent be his or her own judge. An article "booming" any breed or variety will not delude any one who will use sufficient forethought to place in the balance all doubtful assertions; it is only the novice who will be misled perhaps to disappointment and failure.

It is not the intention of the writer to "pull down" or "sling mud" at any variety of the Leghorn family, and when we say that there is probably no variety of fowls that has been, and is being "boomed" more than the Buff Leghorn, we hope no one will come down on us and accuse the writer of some criminal action against this beautiful and noble variety of the grand old Mediterranean class. Yet, nevertheless, it has occurred to us that some writers who are making a specialty along the booming line are inclined to spread a little more canvas to the wind than their little craft can gracefully and becomingly support. Possibly such is not the case, but the thought has occurred in this phase to the writer, and perhaps it has been the same with others. Personally, the writer is willing to yield all to the Buff Leghorn and their adherents that we believe is their rightful due, but further than this we will simply have to decline to go. That this excellent variety is one of no mean beauty when carefully developed and has an exceptionally promising future before it, not one will for a moment deny, but when some one works on the hypothesis that this fowl is root and branch, all in all, then there arises a reasonably good chance for a question of doubt.

Recently, while looking over some of our poultry papers, the writer noted an article carrying out this strain of thought. The Leghorn breed was taken up one by one and supposedly reviewed in melodramatic style. First came the Whites and then the Browns, and so on down the list until we were presented to that compound paragon which of all was the only one fit for mentioning. This, of course, was but some one's idea; but as we read the sketch, the writer could not help asking himself, "Does he really believe all that?"

Something like a year ago, the writer had the pleasure of reading an article from the pen of one of America's best writers whose ideas are seldom anything but the best and whose thoughts are always broached in the very best of English. This gentleman took the stand that as a certain kind of fruit had become a leader and was an acknowledged standard for all other varieties of its kind in point of excellence, so the Buff Leghorn had become a standard for all other Leghorns and an egg standard for fowls in general. Here, with all due respect to this gentleman's years and experience, the writer would have to take exception. Such a statement may be true locally, but taken the country over it seems anything but logical. Granting that this assertion is true among fanciers, which, by the way, we are very far from being willing to admit as a fact, it must be remembered that the fancier represents but a very small portion of the population interested in poultry-raising. Should you ask the average farmer how his fowls compared with the Buff Leg-

horn, he would be lost. Or perhaps he would answer your question by asking you if this new kind of "hens" was any different from other Leghorns. If you don't credit this, just try it and see how many times in ten it fails. Perhaps the result would prove an eye-opener to some of our "booming" friends.

There is still another argument often brought out, which, while it is true so far as it goes is in reality only the truth half told. This is that the Buffs are the quickest to mature. Compared with other breeds, perhaps they are, but when compared with other Leghorns there is at once a serious question of doubt. Why should the Buff Leghorn be the quickest to feather and mature? Why quicker than the Browns or Whites? The Buff Leghorn, strictly speaking, can not justly lay the claim to being as purely Leghorn as other varieties of this breed, simply because foreign blood was necessarily introduced to produce the Buff. In all probability this foreign blood came from a slower maturing breed than the Leghorn; in fact, of necessity it must. Then why should this combination produce a quicker maturing offspring than either of the parents? You might just as well think that by mixing brown with black one could obtain a pigment even more black than black, granting that such a thing was possible. Hence, it can be seen by the most obtuse mind that the facts of the case are not even borne out in theory.

It may be possible that the Buff Leghorn has the making of a first class broiler as some would lead us to believe; but when one considers the excellent qualities of the Plymouth Rocks and the Wyandottes in this respect it would seem that the Buff, like all Leghorns, is a long way from the ideal. As the writer stated in a former article, the Buff or any other variety of Leghorns can not excel as broilers. There is little use in attributing to them a quality that nature has not prepared them for. Such assertions cannot but result in injury to the breed. The writer has never known of an instance where the Leghorn has been used successfully for this purpose. Such ideas expressed are like the chickens that always come home to roost. Because a mowing machine is a first class thing to cut hay, why heap ridicule on it by claiming that it can rake and bunch it equally well?

C. P. REYNOLDS.

FATTENING TURKEYS.

Successful Rhode Island growers as a rule feed their turkeys from start to finish on northern white flint corn, which they grow themselves. They take great pains to use nothing but well-seasoned old corn, because they have found that new corn causes bowel trouble, which is more to be feared in a turkey than any other fowl, and is liable to be fatal. Diarrhoea seems to be more prevalent among turkeys than any other disease, and a bird that gets sick is very apt to die. Foraging in a field of green oats may give them diarrhoea and cause much loss.

Turkeys not only like northern flint corn best and fatten best on it, but it makes their flesh more tender, juicy and delicious. That given the little ones is coarsely ground and mixed with sweet or sour milk, or made into bread that is moistened with milk. This is gradually mixed with cracked corn, which, when they are about eight weeks old, is fed clear or mixed with sour milk. In the fall whole corn is given.

Turkeys which can be given full liberty from the first on a dry pasture lot, and after a few weeks allowed to roam and roost wherever they choose, thrive the best if they escape accident or enemies. Two turkey-hen mothers and their broods will then generally join forces apparently for mutual protection from hawks and other enemies. Where they cannot be given full liberty they should be given fresh grass pasture daily, and milk curd, corn gluten and wheat, as well as corn, to take the place of insects. Great pains should be taken that they are not overfed, and that they are given as much liberty for exercise as is possible. The brood may be prevented from leaving a certain field by shinging the mother turkey so she cannot fly over the wall or fence. This, however, places her at the mercy of dogs.

After June 1 those at full liberty are usually fed but twice daily. They are hunted up and fed in the fields, that

they may stay away from the farm-yard and out buildings. Many give the turkeys no food from August 1 until cool weather; they get their own living until they come up from the fields in September or October. We know of cases where those not fed in either August, September or October, but fed well in November, have been larger and plumper at Thanksgiving time than lots fed the season through. The principle seems all right. Doubtless those to be marketed in August and September, if fed corn right along will be plumper and mature earlier, while those allowed to get their own living during the three months will exercise

more and secure more nitrogenous or growing food, and grow larger frames. Much depends, however, upon the range, the quantity of insects, and the number of turkeys that run on it. Some fields will support more turkeys than others. The number of turkeys may be so large as to almost exterminate in two or three seasons the insects upon which they feed.

Turkeys that have been fattened soon grow thin if not killed when "fit," and do not fatten readily for some time. The grower will use some judgment as to whether he should feed them grain all through the summer and fall months.—S. Cushman.

A Thrilling Rescue.

A YOUNG LIFE SAVED IN A REMARKABLE MANNER.

Florence Sturdivant, of Grindstone Island, Saved from an Untimely Death—Her Dangerous Predicament.

From "On the St. Lawrence," Clayton, N. Y.

Among the Thousand Islands is one called Grindstone. It is seven miles long and three wide. The inhabitants of this island are a well-informed class of people who devote their energies to farming and quarrying for a livelihood. In the home of one of these islanders resides Florence J. Sturdivant, the four-year-old daughter of Mr. and Mrs. William H. Sturdivant. She had a remarkable experience recently.



FLORENCE J. STURDIVANT.

In an interview with a reporter Mr. Sturdivant said: "Florence was taken sick in February, 1896, with scarlet fever and we immediately called a physician. After two weeks the fever subsided but Florence was left with a very weak back. Severe pains were constantly in the back and stomach. The difficulty seemed to baffle the efforts of the physician. "Finally at the end of four months of

treatment, we found our patient completely prostrated. At this time we called an eminent physician, who agreed with the diagnosis of our physician. He prescribed a course of treatment and we followed it faithfully for three months, but instead of improving, Florence failed.

"A brother of my wife, who resided in Canada, but was visiting us, advised us to use Dr. Williams' Pink Pills for Pale People, and I purchased a box of the pills and began to give them to Florence. This was in October, 1896. After using the pills a short time we could see an improvement. Her strength began to return and her appetite was restored. When she had taken one box the pains in her back and stomach ceased and her recovery seemed certain.

"We eagerly purchased a second box of pills and watched with delight the change for the better that was being wrought daily. Florence finally became strong enough to walk a little. By the time she had used three boxes of the pills she was evidently well. We continued the treatment using another box, the fourth, to prevent the possibility of recurrence of the difficulty.

"We cannot praise too highly the value of Dr. Williams' Pink Pills. I am positive that without their use our child would have been a confirmed invalid."

(Signed) WILLIAM H. STURDIVANT.

Subscribed and sworn to before me this sixth day of April, 1897.

H. W. MORSE, Notary Public.

Dr. Williams' Pink Pills for Pale People are sold by all dealers, or will be sent postpaid on receipt of price, 50 cents a box or six boxes for \$2.50 (they are never sold in bulk, or by the 100), by addressing Dr. Williams' Medicine Co., Schenectady, N. Y.

BIG beautiful BARRED P. ROCKS, exclusively High scoring, thoroughbred stock. Pitkin and Conger strains. Cockpans, \$2 to \$2.50. Eggs \$1 per 15. E. M. KIES, Reading, Mich.

Nabash Line
THE SHORT ROUTE

Chicago, St. Louis & all points West.

Home-seekers and California tourists, write
R. G. BUTLER, D. F. & P. A.,
9 Fort St. West, (Hammond Building.)

Detroit, Gd. Rapids & Western R. R.

(Formerly Detroit, Lansing & Northern.)

And Chicago and West Michigan Railway.
Popular routes between Detroit, Lansing, Bay View,
Grand Rapids, Petoskey, Manistee, Muskegon.

Trains leave Detroit, Fort St. Station, as follows:

For Lansing and Grand Rapids..... 8:00 A.M. P.M. P.M.
Ionia and Greenville..... 8:00 1:10 6:10
Muskegon and Traverse City..... 8:00 1:10 ..
Petoskey..... 8:00
Big Rapids..... 8:00 1:10 ..

Arrive at Detroit 11:40 a.m., 5:40 and 10:30 p.m.
Daily except Sunday. Parlor cars on all trains.

City Passenger and Freight Office, 7 Fort St. west,
Detroit. Phone 388.

BLAINE GAVETT, Dist. Pass'r. Agent.
JAMES AUSTIN, Commercial Agent.
Geo. DE LA VEN. Gen. Pass Agent.

GRAND TRUNK RAILWAY SYSTEM.
Depot foot of Brush St. City office, 84 Woodward Ave. Telephone 39.

Lve. EAST VIA PORT HURON. Arr.

• 7:55 am	Mt. Clemens, Pt. Huron & North	8:00
10:15 am	Toronto, Montreal & Portland	1:10 6:10
1:19 pm	Mt. Clemens, Pt. Huron & North	9:40 pm
.....	Montreal, New York, etc.
4:50 pm	St. Clair, Romeo and Pt. Huron	1:50 pm
10:38 pm	Buffalo, Toronto and New York	6:10 pm
1:30 pm	Mt. Clemens	6:10 pm

EAST VIA WINDSOR.

12:00 pm	Toronto, Buffalo and New York	1:50 pm
6:40 pm	London and Int. Stations.....	1:30 pm
.....	London and Int. Stations.....	9:05 am

DETROIT AND MILWAUKEE DIVISION.

6:55 am	Saginaw, G. Haven & Milwaukee	9:25 pm
11:30 am	G. Rapids, G. Haven & Chicago	9:55 pm
4:05 pm	Saginaw, G. Rapids & Milwaukee	11:50 am
5:45 pm	Pontiac & Intermediate stations	1:15 pm
8:30 pm	Lansing, Battle Creek & Chicago	7:00 am

*Daily except Sunday. *Daily. *Sunday only.

DO NOT BUY A GUN

until you have sent for our free illustrated catalogue of all sporting goods.

JOHN MEUNIER GUN CO.,
272 West Water St., Milwaukee, Wis.

ASTHMA CURED!

Dr. Hair's cure has brought happiness to sufferers. A \$1.00 bottle and valuable treatise sent free, you pay the expressage. Address DR. B. W. HAIR, Dept. L, Cincinnati, O.

CANCER

30 years experience enabled me to scientifically treat and effectively cure Cancer and Tumors without the knife.

72-page book sent free. Address DR. L. H. Gratigny, Norfolk Bldg., 5th and Elm Sts., Cincinnati, Ohio

Farmers' Clubs.

CONDUCTED BY A. C. BIRD.

All correspondence for this department should be addressed to A. C. Bird, Highland, Mich.

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—J. T. Daniels, Union Home.
Vice-President—Patrick Hankard, Henrietta.
Secretary-Treas.—F. D. Wells, Rochester.
Directors—G. L. Hoyt, Saline; L. H. Ives, Mason; W. H. Howlett, Dansville; C. J. Phelps, Damon; E. M. Whelan, North Newburg; A. L. Landon, Springport.

All communications relating to the organization of new Clubs should be addressed to F. D. Wells, Rochester, Mich.

PRACTICAL WORK IN CLUB EXTENSION.

Many readers of the local club reports in these columns during the past few weeks, have written to us congratulatory letters upon the enthusiasm everywhere manifested in Club extension. The Association question for September has awakened new interest along this line in every Farmers' Club in the State. Report after report has made plain the fact that the Clubs are in earnest, and that the enthusiasm of the September meeting is but the natural outgrowth of the past year's wonderful work.

Nearly one half of the Clubs have taken definite action in the matter, and through carefully selected committees are already planting new Clubs in adjacent undeveloped territory. Before the close of the coming winter the results of this good work will cast gloom over the spirits of many a spoils seeking politician and unscrupulous public officeholder.

TO EVERY FARMERS' CLUB IN MICHIGAN.

Scores of the most aggressive and progressive farmers' Clubs have organized and entered upon an active campaign of Club extension. Why should not every Club in the State follow this excellent example? There is a strength in numbers not otherwise to be gained. Every new Club means better work and a wider influence for the Association. If there exists any Club in the State that has not already provided itself with a carefully selected committee to push this work of Club extension, the October meeting should not be allowed to pass without such provision being made. Will not the presidents of the local Clubs bring this matter to the attention of the members at their next meeting?

THE MEETING OF THE EXECUTIVE COMMITTEE.

The Executive Committee of the State Association met at the Hudson House, in the city of Lansing, on September 23, for the purpose of making arrangements for the annual meeting and discussing the general condition of Club work. Through the courtesy of the presiding officers several of the ex-presidents and ex-secretaries took an active part in the deliberations. Although the completed program can not be definitely announced for two or three weeks, we can assure our readers that the committee have in store for the delegates to the annual convention a rich feast in the line of public addresses, and the consideration of many questions of great importance to the Farmers' Club movement and to the people of the State in general. The work of the committee will be officially announced in an early issue. Their action in inviting the State Grange to join the State Association in a union meeting during the session will meet with general approval among the Club workers of the State. Such manifestations of good fellowship between the two organizations are faithfully representative of the fraternal relations existing between them.

From every quarter of the State

good news was brought by the several members of the executive committee present, and not a discouraging report was received nor a depressing word spoken. The meeting was an inspiration to the work.

REPORTS FROM LOCAL CLUBS.

JOE, CHIPPEWA AND LINCOLN FARMERS' CLUB PICNIC.

The Coe, Chippewa and Lincoln Farmers' Club held, instead of their regular meeting, a farmers' picnic in the grove at Shepherd and it was a success beyond the expectation of the most sanguine. A rain the day before laid the dust, the weather was cool and the day all that could be desired. A goodly number of farmers and their families from the Union club, besides many who were not members of any club and many from the village of Shepherd, helped to swell the number, also many from other neighboring clubs were in attendance.

The program was good and well rendered. It consisted of music, both vocal and instrumental, papers by talented farmers, recitations by children and grown people and discussions by everybody. The Shepherd band gave, gratis, some of their best selections which were thankfully received by the entire audience.

The crowning event of the occasion was the paper by Robert Gibbons, one of the editors of the Michigan Farmer, on "The benefits derived from organization, both State and local." It was full of good sense, and many new and good ideas were obtained. It was unanimously voted to have it printed in the Michigan Farmer in order that all the readers of that paper may have the privilege of reading it, and all who heard it will read it as eagerly as those who did not hear it.

The picnic was so much of a success that a county organization was formed by electing A. C. Rowlader president, and M. E. Kane secretary, and hereafter Isabella County Farmers' Clubs will hold annual picnics.

Isabella Co. A. C. ROWLADER, Cor. Sec.

GRASS LAKE FARMERS' CLUB.

After hibernating during July and August the Grass Lake Farmers' Club has resumed operations with renewed energy, and recently held a very energetic meeting at the home of Mr. Alfred Hookway. While the club has been resting, the officers and committee have been busy formulating plans for the coming year's work, and as a result have issued a new program, which, if carried out (and it will be), will give plenty of practical work to the club.

At this meeting Mrs. Madison Davis presented a paper on "The Social Training of Children." It was full of practical, common-sense ideas, and was thoroughly discussed by the members. The thoughts brought out in the discussion were: that it is thoroughly necessary for the parents to begin early in the child's life to direct him; that the parent should be the one to set a good example, and that fathers should not be so bound up in the things of this world that they can not give proper training to their children. The good, pure, social atmosphere of the farm was thought to have advantages over the city in the training of children.

"To what extent can hog raising be carried on with profit, and what is the outlook?" When hogs are low in price experience in selection and careful feeding are necessary adjuncts in raising hogs to make it profitable. With proper handling it pays to winter hogs and sell in May or June. Corn, with plenty of good swill, hay, bean pods, cornstalks, etc., to supplement the grain ration was thought to be good. Do not try to raise pigs entirely on a board floor. Turn them out of doors. We are now having a good export trade in meats, and with beef and mutton scarce, pork is sure to go higher.

Jackson Co. REPORTER.
RICHMOND AND RILEY FARMERS' CLUB.

The September meeting was held at Joseph Stephenson's on the 8th inst. The attendance was small. The selections read were unusually good, the rendering making the old pieces sound like new.

The question for the day, "Are you satisfied with present conditions? If not, why not?" was then taken up. This question was to be discussed by both ladies and gentlemen, but in spite of the fact that farmers are credited with a vast amount of grumbling, there was not one who felt like

finding fault with present conditions. Perhaps the price of wheat had something to do with the general state of satisfaction. The gentleman who suggested the question wasn't present.

Mr. Stephenson said as a farmer he was satisfied. We are past the period of depression. The failure of crops in foreign countries has opened other markets. Their misfortune is our gain. It will take them several years to get a surplus of wheat as in the past. The farmer who is business man enough to see every chance and make the most of it, is the one to be satisfied.

Mr. Collington, just returned from a visit to eastern New York, said Michigan was good enough for him.

Mr. Henderson said he had a good farm and a good family and that he could make a good living from any farm in the country. No question was given out for next meeting, hence be sure and put one in the question box. The next meeting will be held at Charles Gilbert's, October 13th.

Mrs. J. STEPHENSON, Reporter.
St. Clair Co.

THE SPRING ARBOR FARMERS' CLUB PICNIC.

The September meeting of the Spring Arbor Farmers' Club was a picnic with the Concord, Parma and Sandstone Farmers' Clubs at the pleasant grove on the farm of Mr. D. E. Crouch.

The day was fine and a large number were in attendance. After dinner had been dispensed with the clubs were called to order by President pro tem C. J. Reid. A program, consisting of singing, a speech, an oration and recitation was then listened to. The next meeting of the Spring Arbor Farmers' Club will be held at the home of Hon. and Mrs. H. N. Teft, October 2d.

Jackson Co. REPORTER.
SPRINGPORT FARMERS' CLUB.

September meeting held at the home of President and Mrs. H. D. Griffith. After the opening exercises, A. L. Landon presented the question, "The best methods of growing wheat."

The old-fashioned summer fallow, well cultivated and sown with Michigan No. 6, was thought best. Messrs. Novis, Joy, Knowles and Griffith favored the Clawson varieties, fallow or stubble ground, well tilled and treated to a coat of barnyard topdressing, with one and one-fourth bushels per acre for poor lands and one and three-fourths for rich soils as the right amount of seed; from September 15 to 20 the best time, timothy seed to be sown October 1, as earlier sowing would interfere with the wheat crop next year.

The new license law on peddlers and hucksters was disapproved. A resolution was unanimously adopted asking that the lowest legal rate be made for the township.

Rev. Smith, of the M. E. church, congratulated the club on the interest manifested in the questions before it for discussion, and the advantages to be gained by interchange of thoughts and methods of farming.

The October meeting on the 10th is to be held with Mr. and Mrs. L. C. Ludlow. Question, "How can we best increase the number of farmers' clubs?" Led by B. G. Brown. "One day's experience," by Mesdames A. H. Dey, R. Deyer and N. C. Brown.

Jackson Co. REPORTER.
CONCORD FARMERS' CLUB.

A very interesting meeting of this club was held at the home of Mr. and Mrs. George S. Teft on September 11. The day was pleasantly cool, and although many were prevented from attending because of the busy season, still a goodly number were present.

In the absence of the president, Mr. Henry Rowe was called to the chair. The usual opening exercises and a short business session were gone through and the club adjourned for the dinner hour.

The afternoon session was a very enjoyable one. The Spring Arbor Mandolin Club being in attendance, they favored us with some fine music, kindly rendering several selections during the afternoon. We were also indebted to several other ladies for music and a recitation.

Mr. Erwin Dewey led in the State Association question. He said it was nine years since this club was first organized and spoke of the way in which the club had grown in strength, usefulness and numbers. He thought if each local club would be responsible for the organization of one club during the year, the local clubs would be doubled to the betterment of the farming community at large. He spoke in favor of the Concord Club making an effort in this direction.

Many members spoke in favor of

said effort being made. They thought one strong working club better than many weak ones, and advised all club members when on committee or program to do the work assigned them without thought of shirking.

An excellent paper was read by Bliss Dewey on "American Farming." He said each farmer should study his soil and learn the crops it was best adapted to produce, its needs and strength, and farm accordingly. Make something of a specialty of these crops, and not undertake to raise a little of everything. He advised farmers not to spread out too much. Do and raise what you have best success with.

This paper provoked much discussion. Some members said the soil here is adapted to mixed farming, and advised growing a little of everything.

The next meeting will be held at the home of Mr. Pennel, October 9th.

Mrs. J. L. PARMENTER, Reporter.
HENRIETTA CENTER FARMERS' CLUB.

After a vacation of nine weeks the members of the Henrietta Center Farmers' Club were very pleasantly entertained by Mr. and Mrs. Owen Hankerd, whose genial hospitality won a place in the first rank for the September meeting. While awaiting the arrival of guests the company was invited to gather around the spacious tables which had been arranged on the lawn and from which was served a goodly supply of watermelons.

The usual order was observed in opening the meeting, the first business of importance being the discussion of the question box.

Question first, "Which is better, a cement or wood water tank?" Answered by Messrs. Louden and Hankerd who were in favor of cement. Both thought the cost was very little more, and they last much better than wood.

"Is it better to drill in wheat or sow broadcast?" It was decided in favor of the drill.

"Does it prevent potatoes from setting to cultivate when in blossom?" Mr. Hayes said they should be cultivated often, as that is the main thing, but do not go too near the roots when in blossom.

"Shall we pay a lady teacher as much as a man?" was a question which seemed to interest all present and was decided in the affirmative.

Mr. Welch said that generally a lady had a better influence and could manage a school better than a man.

Mrs. Young thought that as a lady is required to have the same education and do the same work she should have the same wages.

The principal question for debate was, "Is the Agricultural College and Experimental Station at Lansing a benefit to Farmers?" After a full discussion by Messrs. Hayes, Hankerd, Fleming, Lown and others, it was decided by vote to be a benefit. All thought it depended somewhat on the farmer himself, as he can send for reports and appropriate the decisions as he needs them.

The question for next time will be, "How to lift the mortgage from the farm."

Owing to the long vacation no literary program was prepared, and after music by Miss Frances Hankerd, refreshments were served to about ninety people, after which all dispersed to meet again the third Saturday in October at the home of Mr. and Mrs. Wm. Reed, of Jackson.

Jackson Co. M. H. Club Reporter.

BLISSFIELD FARMERS' CLUB.

The Blissfield Farmers' Club met September 15, at the house of Mr. and Mrs. M. H. Cogswell. The Club had agreed to have a fair at this time. As an experiment it more than surpassed the expectations of the members. The exhibits were placed in a building used for a drying house for fruit. Nearly all of the members brought something. The ladies brought their needlework, and the display in this department was all that could be desired. Some old linens spun and woven by hands that have long been at rest and old relics that have been handed down from father to son. A good exhibit of corn, wheat, potatoes and garden vegetables was on the tables. Byron Niles had an exhibit of flowers that took the fancy of all.

After dinner the meeting was called to order by Treasurer W. H. Colyer. After listening to a short literary program, M. H. Cogswell was introduced to talk on the subject, "In what respect is our county fair, as it is now conducted, beneficial to the farmers?" He gave a history of the way the fair had been carried on for the last five

teen or twenty years. He thought they were trying to do away with all the demoralizing elements and have succeeded in a great measure; that there could be a great saving in expenses of advertising and awarding speed premiums. He thought we should be loyal to our county and try and make the fair a success.

Peter Coller, of Palmyra, was called on. He approved of the remarks of Mr. Cogswell, and thought in some respects there could be a saving so that the debt the fair was owing could be diminished gradually.

It was agreed by vote that this Club should use its best endeavor to make the county fair true to name, and the member of the executive committee from this township should use his best judgment to that end.

J. K. CRANE, Reporter.

Lenawee County, Mich.

THE LIBERTY FARMERS' CLUB.

September 4th, after a vacation of three months, a few of the members of the Liberty Farmers' Club assembled at the home of Mr. and Mrs. M. Weatherwax. In making the report of the house viewing committee, the chairman exhibited a can of pears put up by Mrs. Weatherwax in 1867, which seemed as perfect as when put up. Mrs. Weatherwax said, when asked for her method of canning fruit, that she just let it boil up, then put it in the can without sugar. The program prepared for July was used at this meeting. The subject, "Which is most profitable for the farmer, making butter at home or carrying the milk to the cheese factory?" was to have been opened by J. H. McCurdy. He being absent, Mrs. W. E. Kennedy said they carried their milk to the factory last summer, and were disappointed. The profits were not what they expected. This summer they made and sold butter and gained by so doing.

D. H. Speer thinks the sour milk of too much value for pigs to sell the milk to the factory.

M. Weatherwax: Am of Mr. Speer's opinion. Think it of more profit to feed the new milk to the pigs than sell the milk at 60 cents per hundred. You must count the expense of carrying the milk, the wear and tear on harness and vehicle, the time it takes you from other work, the value of the milk for feed, the cost of cans and all expenses connected with it.

President Kennedy: The profit depends upon the relative price of cheese and butter. When we sell the milk we only consider the profit from cheese and butter.

Mrs. Crispell had ascertained from weighing milk and butter that 60 cents per hundred for milk equaled 16 cents per pound for butter.

"The Agricultural College" was next discussed. The secretary read from The Michigan Farmer an article by J. T. Daniels, on the subject.

President Kennedy favors the Agricultural College even though so small a per cent of its graduates stick to agriculture. Agriculture is the backbone of everything, yet there has never been nearly as much done for it as for all other industries. When we contrast the amount of appropriations for that College with other institutions of the State we find them very small in proportion.

M. Weatherwax: Does this College ever do anything for a practical farmer? I say no. We could not follow their plan and live. I believe the State throws away every dollar she appropriates for it. No farmer can know anything about farming without doing the work. At the College they have the very best of fertilizers and they are all furnished.

R. D. M. Edwards: The importance of this subject has led me to look up figures and statistics. I make this statement: Were it not for the Agricultural College we would not be here to-day as a Club. The education of the College has called out all of these agricultural organizations. On the financial part this objection is made, that not one graduate in ten become farmers. He read from the College journal showing that of graduates, fifty per cent are engaged in agriculture, and of under-graduates the per cent is 45-62-100, or not quite one half. The interest on the lands appropriated for the College amounts to \$80,000. The State paid last year \$10,000 towards its support. This year it will pay \$11,000. This makes the farmers pay five cents on a valuation of \$5,000 towards the support of the College, or one cent on \$1,000. Except in erecting new buildings and repairing them, the people are not taxed for its support. A student who wished to enter the

best institution of the kind, examined all other agricultural colleges, both in Europe and America, and then wrote President Snyder that he should enter the Michigan College if he could be admitted there. The Michigan Agricultural College stands at the head of all agricultural colleges. The bulletins sent out by it are free to any one who cares enough for them to pay one cent for a postal card to send their name to be placed on their mailing list. These bulletins contain much valuable information. I say, let each person go there and see what they are doing before he condemns it.

D. H. Speer: Thinks these bulletins should be preserved, and that the Club should have them sent to it for distribution among its members.

Mrs. M. Winans: Thinks it just as necessary that the girls should graduate there as the boys, and that if she were twenty years younger she would go there.

A. Vicary: I wish to place myself upon record as being in favor of the Agricultural College. I believe lack of education is one of the great drawbacks of the farmer. It takes thought as well as muscle to manage a farm, and a good man to be a successful farmer. We want our best men and women on the farm, and we need to use advanced methods in farming. The experiments made by the College have done wonders for us, especially in fruit culture, in discovering pests and diseases and the way of exterminating them.

MRS. J. D. CRISPELL, Reporter.

Jackson County, Mich.

MARION FARMERS' CLUB.

Another successful meeting of the club was held August 26th, at the home of Mr. and Mrs. Henry Bucknell. One of the most interesting parts of the program was the description by Mr. Bert Fairchild, of California, of the manner of harvesting grain, the care of fruit orchards, ornamental trees and shrubs and the peculiarities of altitude.

The young people, the students present, were addressed by Miss Helen Norton on the subject of study. Each word that fell from her lips expressed some valuable thought as applied to study, drawn from that best of sources, experience.

The recent death of Miss Ruth Norton, one of the most winsome and lovable young members of the club was deeply lamented by all. A committee was appointed to draw up a set of resolutions respecting this most untimely death. The next meeting will be held at the home of Mr. and Mrs. L. I. Bromley.

Livingston Co.

PROGRESS FARMERS' CLUB PICNIC.

Progress Farmers' Club and Whitney Grange held their annual picnic on September 2, with a good crowd in attendance. Clio cornet band, the Rice Brothers, and the choirs of both the Club and the Grange furnished the music. Good recitations and a bounteous dinner were provided. After the dinner Mrs. Mary A. Mayo, of Battle Creek, gave a very interesting talk. She spoke of the need of better men, men that could not be bought; and of the seven and one-half million immigrants in the last fifteen years, and how soon they become voters. She said it means something to cast a ballot. She spoke of the English syndicates owning so much land in this country, and warned the people of their danger. She thought we complained too much. If we will only look around we will see that we have a great many things to be thankful for. Another need was the better organization of the farmers.

All regretted that Hon. A. N. Kimmins was unable to be with us as we expected he would be. The Club will meet with Mr. and Mrs. John Henderson, the first Wednesday in October.

F. A. BRADLEY, Reporter.

Tuscola County, Mich.

WIXOM FARMERS' CLUB.

The Club held its September meeting at the home of Mr. and Mrs. Milton Tuck. There was a good attendance, and an otherwise excellent program was supplemented with an original poem by Mrs. Kittie McCoy, of Walled Lake, and a paper by Miss Nora Smith, of Plymouth, both able productions. The former was entitled "Tis Worth That Makes the Man," and portrayed the purity of influence in the farm home, the grandeur of nature's teachings in the farm life, the nobility of soul which toll-stained garments do not hide and intimated how may be acquired that beauty of character which constitutes "the worth that makes the man."

The latter was upon the subject

"Girls and Their Education," in which was historically traced the growth of our present co-educational system and the rapid increase in the number of institutions for the higher education of women. Since the founding of Vassar college until now in each of twenty-one States there is a university endowed by the United States government, all offering equal advantages to women and on the same terms as to men, while in Iowa, Michigan and Kansas there does not exist a single separate college for men. It was averred that so well had women improved the opportunities thus offered them that their efficiency in learned professions, and aptitude shown by their achievements have overcome popular prejudice, and forced men to recognize the fact that woman too is endowed with understanding, intuitive and reasoning faculties, judgment, conscience, affections and will, and that in the affairs of life she must necessarily use them exactly as do men. Hence wom-

an who is to be the center of a home and wield a momentous influence in its affairs and perhaps forced to support herself and others dear to her, should have enlightened understanding, the intuitive and reasoning faculties directed and strengthened, the judgment informed, conscience quickened and will fortified that she may the better discharge her duties and embellish her home with brightness and culture.

The Association question was opened by J. L. Sibley, who thought that our programs are too long and that it would be better to not meet until afternoon, then have games, more music, less discussion and discard the Association questions altogether as he considered them too dry.

Other speakers held opposite views, saying that the purpose of the Clubs is not simply that we may derive pleasure from the meetings, the programs should not be shortened or the

(Continuation page 248)

COPYRIGHTED 1897, BY HOME TREASURY CO., AUGUSTA, ME.

GREAT PICTURE-PUZZLE CONTEST

BIG PRIZES AWARDED EVERY DAY.

We intend that within two years, our FIRESIDE GEM MAGAZINE shall have a million subscribers and also that it will have a reputation of being the best advertising medium in America.

To effect this result, our directors have decided to spend \$35,000 in Grand Prizes, to induce people to become inter-



No. 1.—This scene is in Africa. The Negro is diligently working because his master is near, although hidden.

Find the Master.

ested in our already popular monthly household publication. We now make you an offer that is so plain, honest and straightforward that you cannot make any mistake.

READ EVERY WORD WITH GREAT CARE.

We publish in this ad't's 4 Picture Puzzles, No. 1, 2, 3, 4, which we want you to study out. When you have solved four correctly, mark them plainly with pen or pencil. Then fill out the lines on the bottom of this ad't and send to us without a cent of money, or even a postage stamp, then if you are awarded a prize, you can if you desire get the prize in cash or in a monthly issue of FIRESIDE GEM and a gift of 10c a year. We shall award a prize to every person who correctly solves the four puzzles, and our gifts will be as follows: For the best solution, received each day, a \$22.00 Gold Watch; for the second best solution each day, a beautiful Gold Watch; for the third best solution each day, a \$9.87 Konrah-Sakih Diamond and Ruby Ring; for the next best solution, a \$5.00 Gold Piece; and for all other correct solutions, Prizes of Good Value. These prizes will be awarded daily, you will not have to wait a long time in uncertainty before you know the results. There is no element of lottery to our plan, it makes no difference whether we get your solution early or late in the day. All you need to do is mail this sheet to us and on the day it reaches

Waterville, if your set of answers is the best, you shall have the \$22.00 Gold Watch, or if second best, the \$11.50 beautiful Tea Set, and so on. We guarantee that we will award you a prize for every correct solution in the pictures, then mark their outlines just as neatly as possible with a pen or pencil. You can do this well or poorly, according to the attention you give to the matter. There is absolutely no opportunity for deception on our part—we cannot afford it. We have over 1,000,000 well satisfied subscribers and for that reason we don't want to

want you to send us even a postage stamp in this offer until you know exactly what prize you have gained by answering the puzzle. When your answer comes we shall open the letter and place this sheet before our learned examiners who are in session daily.

The last mail that we will take from the Post-Office is at 4 p.m. and we mail for that place Waterville, Maine, after that hour will remain in the P.O.

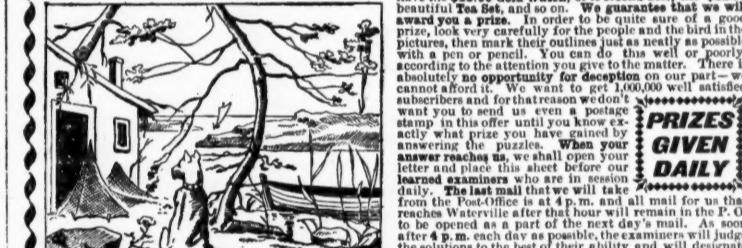
to be opened as a part of the next day's mail. As soon after 4 p.m. each day as possible, the examiners will judge the solutions to the best of their ability and will designate the prizes. We will write to you at once notifying you when your prize has been won, you, the subscriber, are satisfied you can add your subscription to FIRESIDE GEM,

and your prize will come to you by return mail or express,



No. 2.—The Parrot has Escaped from the Cage.

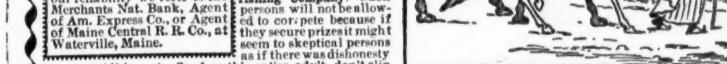
Try to find him.



No. 3.—Find the Fisherman. He is hidden nearby.

carefully packed. It is not exactly what you expect, or what we represent, then you can have your subscription money back, together with expense of postage, etc., incurred by you. There never was a fairer offer printed in any paper in the United States. It is positively above any possibility of chicanery or misrepresentation. You can enter this contest even if you are already enrolled in our big list of happy subscribers, we shall, in awarding you a prize, make only the condition that you get some friend to send a subscription in order that you may secure the gift. You can enter any time before May 1, 1898, but the sooner the better.

Only one person in a family will be allowed to enter this contest. The contest is open to men, women, boys and girls of the United States, Canada, Mexico and all other countries, with the exception of people who live in foreign countries, or in colonies, or in territories, or in Alaska, or known to do exactly as we advertise. As to our reliability we refer to the Merchants Nat. Bank, Agent of Am. Express, or Postal Telegraph Co., at Waterville, Maine, or employees of Sawyer Publishing Company. Such persons will not be allowed to enter the contest, because if they win a prize it might appear to skeptical persons as if there was dishonesty in our establishment. Send us this entire ad't, don't clip out the pictures separately, but send us the entire offer.



No. 4.—Each Arab has a wife with him. Find two Women.

Write Your Name, Address, Etc., on those Lines.

Name _____
Street _____
Town _____
County _____ State _____

Send this Whole Advertisement to SAWYER PUBLISHING CO., Puzzle Dept., Waterville, Maine.

We PAY FREIGHT Box and Pack free. PAPER line all boxes. REPLACE free. Give BUYER'S choice; low WHOLESALE prices orders large or small; 10 trees at 100 rate, 300 at 1000 rate. GUARANTEE SAFE ARRIVAL, trees TRUE to name, FREE from SAN JOSE scale, and of BEST quality. GUARANTEE SATISFACTION.—WRITE for lists, photos and FULL particulars of foregoing Stark 12 CHALLENGE Points. STARK BROS., Louisiana, Mo., Stark, Mo., Rockport, Ill., Danville, N.Y.

**STARK
NURSERY**

discussions curtailed, that a single feature cannot be expected to suit all members equally well but each is sure to please someone, for we have differing tastes and each should be respected. Furthermore that the administration of public affairs, solution of governmental problems and settlement of policies should engage our earnest attention, that thus abuses may be rectified and justice become more prevalent, and questions pertaining thereto are not considered dry by those who properly regard their duties as citizens; also public discussion affords one of the best means of diffusing knowledge and transmitting to others whatever information we may have gleaned from various sources, and as members of society we have no right to store this up for our own exclusive benefit and allow it to perish with us, for this would savor too much of selfishness. We should give as well as receive and this recouping process must go on if society continues to advance.

The following resolution was unanimously adopted: Resolved, that it is the sense of this meeting that we should follow the same method in preparing our programs as in the past.

E. T. NICHOLSON, Cor. Sec
Oakland County, Mich.

WALES FARMERS' CLUB.

The annual meeting of the Wales Farmers' Club was held at the home of Mr. and Mrs. James Dunsmore, on September 3. The gentlemen and ladies alike took a lively interest in the discussion of the question, "Is the law regarding the distribution of property just to the widow?" Some said that although it is impossible to enact a law that will be just in all cases, yet they believed the present law as nearly right in principle as possible. Some objected to the law on the grounds that the widow ought to have the right to dispose of the property which she has worked to help accumulate. So many conflicting opinions were given that it was evident that the law was not well understood.

The incidental business of the Club being attended to the work of electing the officers for the ensuing year was proceeded with, with the following result: Our past president, C. S. King, who has served the Club as president so long, and who with Mrs. King and a few others organized the Club and has been its main factor ever since its organization, declined to accept the office again. With reluctance the Club accepted the situation, and Mr. James Dunn elected for the ensuing year. The other officers were: Vice-president, James Dunning; recording secretary, Albert Hand; cor. secretary, Mrs. Albert Hand; president of ladies' section, Mrs. James Dunning.

The topic for the next meeting will be, "Which will yield the most food for stock, to pasture the land or to cut it for hay." The next meeting will be held at the home of Wm. Degraw, on October 1.

MRS. ALBERT HAND, Cor. Sec.
St. Clair County, Mich.

When writing to advertisers please mention the Michigan Farmer.

GO INTO BUSINESS
for yourself and make money drilling wells. People must have water, and will always pay liberally for good service of this kind. For all kinds of drilling—water, gas or oil you will find **STAR DRILLING MACHINES** to be the most rapid and most durable made. Are made on new and improved lines, and embody in their construction the best material and workmanship procurable. Either steam or horse power, and made in 9 sizes. Star Drilling Machine Co., AKRON, O. or ST. LOUIS, Mo.

Catalog free on application.

HEEBNER'S Patent LEVEL-TREAD With SPEED REGULATOR. For 1, 2 and 3 Horses.

LITTLE GIANT Threshing Machine. Threshes Grain, Rice, Flax, Millet and Grass Seed. Fully Warranted. Feed and Envelope Cutters, Feed Grinders, &c. HEEBNER & SONS, Lansdale, Pa., U.S.A.

"Eli" Baling Presses
28 Styles & Sizes for Horse and Steam Power. Hay or Straw Feed Opening. Power Leverage 64 to 1. STEEL Largest line in the world. Send for Catalog. COLLINS PLOW CO., 1117 Hampshire St., Quincy, Ill.

This MILL Does all kinds of work fine; on one set of grinders without injuring them. Handles CORN and COB, rice, barley, oats, and screenings. It is different from all others. (Also make 6 sets Belt Power Mills 2 to 25 H.P.) D.N.P. BOWSHIER CO. So. Bend, Ind.

Potash

gen. Too little Potash is sure to result in a partial crop failure.

Free

is one of the three important ingredients of a complete fertilizer; the others are phosphoric acid and nitro-

An illustrated book which tells what Potash is, how it should be used, and how much Potash a well-balanced fertilizer should contain, is sent free to all applicants. Send your address.

GERMAN KALI WORKS, 93 Nassau St., New York.

desire to enter into correspondence with all contemplating the purchase of anything in their line. They think they have one of the most complete assortments of strong, smooth, healthy,

FRUIT AND ORNAMENTAL TREES

Small Fruits, Vines, Shrubs, Roses, Bulbs, Hardy Herbaceous Plants, Greenhouse Stock, Etc., on the market and invite all buyers to come and see for themselves. They are to be found at the old stand where they have labored faithfully for the past 43 years to build up a reputable business. Catalogues free.

Address THE STORRS & HARRISON CO., Box 18 Painesville, O.

At Cost.



FOR STOCK FARMS.

FOR DAIRY FARMS.

FOR SMALL SAW MILLS.

FOR SMALL THRESHERS.

8 to 12 H.P. Second Hand Engines. MANY DIFFERENT MAKES and CONDITIONS.

These cheap Engines were taken in trade from Threshermen needing more powerful or more modern Engines of our make.

VARIOUS LOW PRICES—COST (To make room for new Port Huron.)

WRITE US.

PORT HURON ENGINE & THRESHER CO.

Port Huron, Mich. Cedar Rapids, Ia. Peoria, Ill. Terre Haute, Ind. Madison, Wis.

STEEL WHEELS FOR FARM WAGONS ANY SIZE Catalogue FREE

TO FIT ANY SKIN ALL STEEL HANDY TRUCK WAGON... MANUFACTURED BY HAVANA METAL WHEEL CO. HAVANA, ILL.

WE MANUFACTURE the largest line of STEEL

Truck Wheels

for Farm Wagons made in the United States. Any size to fit any skein, both staggered and straight spokes.

HAVE YOU STUMPS TO GET RID OF?

HERCULES POWDER WILL DO IT SAFELY, SURELY, AND CHEAPLY.

ASK YOUR DEALER FOR IT, AND IF HE WANTS TO PUT YOU OFF WITH SOME UNKNOWN BRAND, SEND TO THE HERCULES POWDER COMPANY, Chicago, Ill., and Pittsburgh, Pa.

DURABILITY

is the most desirable quality in a tank. These possess it in a high degree. They are made in any size with capacity from 2 bbls. to 150 bbls. They are so made that they cannot leak. Especially desirable for use in buildings. Not injured from freezing. We can't tell you all about them here. Better write for prices, &c., to Kelly Foundry & Mch. Co., 15 Furl St. Sothen, Ind.

WILL NOT SHRINK SWELL LEAK OR GO TO STAVES GALVANIZED STEEL TANKS MEANY INDPLS

Completely Ground

—husks, cob and all, is the corn that is treated by the Scientific CRINDING MILL. Steam, water or suitable power. Many sizes. Grind all grain singly or mixed. Grinding plant supplied by nov. Other styles for horses. Write for catalogue before you buy. It will pay you.

THE FOOS MFG. CO. Springfield, Ohio.

Catalog free. GRIND YOUR FEED with the WOLVERINE—made on new principles. Grinds for feed or table use. 2 to 16 h.p. Only ear corn Belt Mill that can be run with 2 h.p. Guaranteed easiest run'g made. Sweep Mill 816 Corn Shellers, 15 sizes. Best hand sheller, 15 sizes. 100 bushel, hand or power \$4.75 per bushel, bu. an hr. Self feed shells 500 bu. daily.

FEED COOKERS and TANK HEATERS BEST and CHEAPEST ON EARTH. Ask Your Dealer or Send to Us for Circular. Economy Mfg. Co., Homer, Mich.

SENT FREE To any Address.

Our New Illustrated Catalogue and Price-List of GUNS, ATHLETIC and SPORTING GOODS. Most Complete Line in America. At very Interesting Prices.

E. C. MEACHAM ARMS CO., St. Louis, Mo.

THE LEFFEL ENGINES

ARE GOOD ENGINES because they are made of the best material known, with the very best workmanship procurable. They are Horizontal, 6 H.P. up; Upright, 3 H.P. up; and Portable, 5 to 12 H.P. These are ideal engines for farm use, good for running Separator, Feed & Ensilage Cutters, Corn Shellers, Feed Grinders, Wood Saws, etc. Send for free book on Engines and Boilers.

JAMES LEFFEL & CO., Box 1306, Springfield, O.

I X L THEM ALL.

QUALITY TELLS

BEST STEEL MILL.

STRONGEST STEEL TOWER. No long story here. Send for Catalogue and prices of our

POWER and PUMPING MILLS.

PHelps & BIGELOW WIND MILL CO., Kalamazoo, Mich.

STOP THAT!

waste of grain by grinding all your feed on a

Buckeye Feed Mill & Power COMBINED

crushes and grinds ear corn, grain and all other grain singly or mixed, or coarse or fine, simple power for other purposes at the same time. Prices and machines both right. Illustrated catalogue free.

Staver Carriage Co., 10th & Wallace Sts., Chicago.

None Better Made

BUCKEYE FEED MILL

1000 H.P. 1000 H.P. 1000 H.P.

1000 H.P. 1000